



ANNUAL PUBLIC HEALTH
REPORT OF THE PROVINCE
OF ASSAM FOR THE YEAR
1932.



DR. P. GUPTA M.B., D.P.H. (LOND.), ETC.,
OFFG. DIRECTOR OF PUBLIC HEALTH, ASSAM.

SHILLONG

PRINTED AT THE ASSAM GOVERNMENT PRESS

1933

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FROM

DR. P. GUPTA, M.B., D.P.H. (LOND.), ETC.,
OFFG. DIRECTOR OF PUBLIC HEALTH, ASSAM,

TO

THE SECRETARY TO THE GOVERNMENT OF ASSAM
IN THE TRANSFERRED DEPARTMENTS.

Dated Shillong, the 31st July 1933.

SIR,

I HAVE the honour to submit herewith the Annual Public Health Report of the province of Assam for the year 1932.

Your obedient servant,

P. GUPTA, M.B., D. P. H.,
Offg. Director of Public Health, Assam.

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ANNUAL PUBLIC HEALTH REPORT

OF THE

PROVINCE OF ASSAM

FOR THE YEAR

1932.

CHAPTER I.

METEOROLOGY; ECONOMIC CONDITIONS, I.E., PRICES OF FOOD-GRAINS, ETC.

The Meteorologist, Calcutta, has furnished the following note on the chief Meteorological conditions of the Province of Assam for the year 1932:—

“ Summary of Meteorological conditions in Assam during 1932.”

Cold weather period, January and February.—The western disturbances, which affected Assam during January were feeble and consequently the rainfall during this month was in defect by 16 per cent. In February there were three disturbances from the west which were more pronounced than those of January. Of these the first and the third caused fairly well-distributed rain on the 4th and on the 20th respectively. The total precipitation for the month, however, remained slightly below normal. The cloud amount and the humidity were nearly normal during these months although the humidity showed a slight defect in February. Both maximum and minimum temperature were slightly higher than usual in January but slightly below normal in February.

The hot weather period, March to May.—In March and April the activity of western disturbances did not extend as far as Assam and the rainfall of the province was below normal by 39 and 29 per cents. respectively. The local rain caused on the 14th April by disturbed weather off the Chittagong-Arrakan coast and the nearly general thunder rain which occurred during the last week of April were insufficient to make up the defect. In consequence of this scarcity of rain, the maximum temperature was higher than usual in these two months and the humidity was in moderate defect in the north-eastern districts in April—the sky was also less clouded than usual during this period. Conditions improved in the month of May and rain fell on about 20 days of the month. Several nor' westers and the severe cyclone associated with an advance of monsoon in the Bay which travelled from central Bay to east Bengal between 22nd and 25th May were responsible for this wet weather in the province. Under the influence of this cyclone Cherrapunji had 18" of rain on the 24th and 31.40" on the 27th and Shillong 10" on the 24th and 10.35" on the 25th. The total rainfall of the month was in excess by 27 per cent. Day temperatures were above normal from the 11th to the 20th but on the whole both day and night temperatures were generally not far from normal. Cloudiness and humidity were more or less normal.

The monsoon period, June to September.—In the wake of the cyclonic storm in the Bay of Bengal during the third week of May the Bay-monsoon advanced into Burma by the 4th week of the month and extended into Assam by the 8th June under the influence of a depression which formed in the north Bay on the 7th. The Bay current, on the whole was normally active during the month and the rainfall was 21 per cent. in excess. Some of the noteworthy falls being 14.1" at Cherrapunji on the 26th, 4.1" at Sibsagar on the 14th, 4.7" at Dhubri on the 28th and 4.2" at Silchar on the 20th. The monsoon rainfall during July was well distributed and during the last ten days of the month the monsoon was active over the province in connection with the westerly movement of two depressions from the head of the Bay and of one of land origin from Bengal. The average rainfall of the month, however, was in slight defect though Cherrapunji had a heavy down-pour of 14.7" on the 6th.

The seasonal trough of low pressure over the Gangetic plain which was established by the beginning of August increased the activity of the monsoon during the first ten days of the month and the unsettled conditions which passed inland into Orissa from the head of the Bay on the 8th also contributed to the same effect. There was a temporary break in the monsoon at the beginning of the 3rd week but the monsoon again revived at the end of the month. In agreement with these variations in the monsoon conditions the total amount of rainfall and the other climatic conditions were on the whole normal during the month. A few sporadic heavy falls, however, occurred at Cherrapunji, and 26·9" of rain was recorded there on the 23rd. The revival of the monsoon which took place at the end of August was maintained by several disturbances at the head of the Bay till the 25th of September after which the monsoon gradually withdrew from the province. Averaged over the province the total amount of rainfall was 21 per cent. excess.

The Retreating monsoon period, October to December.—Under the influence of the Bay storm, which crossed the coast near Calingapatam on the 22nd October morning and moving north-eastwards filled up over Upper Burma on the 26th, widespread rain fell over the province during the period 23rd to 25th. The average rainfall of the month was more or less normal. A few sporadic heavy falls, however, occurred in the province during the month, Silchar recording 6·9" of rain on the 13th. In connection with the movement of one cyclonic storm and a depression from the Bay into north-east India extensive rain fell in Assam between the periods, 2nd to 5th and 13th to 15th November causing a large excess in the month's rainfall. In keeping with this excess of rainfall during the month cloudiness as well as minimum temperature was above normal. The first fortnight of December was however characterised by a few falls of rain. But during the last week of the month a western disturbance affected the province and fairly widespread rain fell on the 25th. In this month also the total rainfall was in large excess and the minimum temperature was above normal".

2. The report deals with the plains districts of the province.

Economic conditions, prices of food-grains, etc. Rice is the staple food of the populace in the plains districts.

The average quantity of common rice that was sold per rupee in 1932 and in the previous five years is shown year by year in the table below :—

Districts.			1932.	1931.	1930.	1929.	1928.	1927.
1			2	3	4	5	6	7
			S. ch.	S. ch.	S. ch.	S. ch.	S. ch.	S. ch.
Cachar	...	...	15 4	10 15	8 7	6 9	6 2	5 10
Sylhet	...	...	10 9	9 12	7 1	6 5	5 11	5 6
Goalpara	...	...	14 12	11 2	7 6	6 11	5 11	5 8
Kamrup	...	...	14 4	10 4	8 9	6 0	5 11	5 5
Darrang	...	...	12 12	11 1	8 9	6 0	5 14	5 8
Nowgong	...	...	13 12	11 9	9 3	7 4	6 0	5 8
Sibsagar	...	...	10 9	8 10	6 7	5 15	5 3	4 10
Lakhimpur	...	...	10 8	7 15	6 5	5 12	5 3	4 9

From a scrutiny of the figures given in the above table it will be seen that the price of rice has undergone a remarkable decline in these years. Corresponding decline in the price of other food-grains is also apparent. The decline in the price of food-grains is due to the world-wide depression of trade which although seriously affected the domestic budget yet does not appear to have exercised a deleterious effect on the vitality of the population as the continued increase in the birth-rate would indicate. The birth-rate has been described to be a sensitive barometer of

prosperity. In the year 1930, however, there was an unexplainable setback in the birth-rate. With this exception birth-rate since 1927 is seen to have kept pace in the opposite direction with the decline in the price of food-grains as shown below :—

—	1932.	1931.	1930.	1929.	1928.	1927.
1	2	3	4	5	6	7
Total number of births ...	238,319	223,006	214,835	224,594	214,057	207,289

The provincial birth and death-rates rose from 28.13 and 18.68 respectively in 1931 to 30.06 and 18.96 respectively in the year under report. It is generally held that a high birth-rate is a direct cause of a high death-rate owing to the great mortality among infants. In the year under report there was an increase of 2,204 deaths over the figure for 1931. The increase is accounted for by the increase of 3,227 in infant mortality. Thus the statistics leads to the conclusion that the economic conditions were favourable to the health during the year under review.

CHAPTER II.—VITAL STATISTICS.

(Including population and Emigration and Immigration.)

3. The report deals with the plains districts of the province, the population of which according to the census of 1931 was 7,927,953 (General census figures. (4,187,085 males and 3,740,868 females). The increase over the population shown in the last year's report is due to the addition of 1,124 (702 males and 422 females) being the population of the Haflong Small Town which was not available then. The ratios in the report have been worked out on the increased population, *i.e.*, 7,927,953.

As in previous years the birth and death-rates have been calculated on the population enumerated at the last census without taking into consideration the growth of population during the year. The appended table drawn up in accordance with the orders of Government shows the corrected population of each district under registration and what the birth and death-rates calculated on corrected population would have been :—

Table 'D' for the year 1932.

Districts.	Mid year population.	Number of births.	Birth-rate per mille based on the intercensal population.	Birth-rate per mille based on the present method.	Number of deaths.	Death-rate per mille based on the intercensal population.	Death-rate per mille based on the present method.	Difference in the birth-rates (5) — (4).	Difference in the death-rates (8) — (7).
1	2	3	4	5	6	7	8	9	10
Cachar ...	543,921	17,714	32.57	32.88	10,397	19.11	19.30	+ .31	+ .19
Sylhet ...	2,748,342	98,790	35.95	36.26	54,914	19.98	20.16	+ .31	+ .18
Goalpara ...	898,777	26,734	29.76	30.28	20,973	23.34	23.76	+ .52	+ .42
Kamrup ...	1,005,288	21,294	21.18	21.80	15,064	14.98	15.42	+ .62	+ .44
Darrang ...	599,133	15,578	26.00	26.64	11,647	19.44	19.91	+ .64	+ .47
Nowgong ...	584,523	12,295	21.03	21.85	8,631	14.77	15.34	+ .82	+ .57
Sibsagar ...	948,010	26,460	27.91	28.5	15,931	16.80	17.07	+ .44	+ .27
Lakhimpur ...	742,982	15,454	26.18	26.85	12,764	17.18	17.62	+ .67	+ .44
Total for the province	8,071,481	238,319	29.53	30.06	150,321	18.62	18.96	+ .33	+ .34

Registration is only partially carried out in hill districts and its result is shown separately in paragraph (11) of this report.

Births and birth-rates.—The birth-rate of the province for the year under review was 30·06 as compared with 28·13 in the preceding year. A statement showing the comparison of the birth-rate of this province and that of the other provinces in India is appended below:—

Provinces.	Birth-rate.		
	1927-31.	1931.	1932.
1	2	3	4
Assam	27·34	28·13	30·06
Bengal	26·6	27·82	26·6
Bihar and Orissa	33·4	33·9	33·8
Central Provinces	45·61	44·27	45·20
Madras	37·43	35·54	36·03
Burma	26·55	26·53	27·75
Bombay	37·35	36·08	35·89
United Provinces	36·44	35·60	34·66
Punjab	39·4	42·72	41·36
North-West Frontier Province	29·79	30·73	28·89

It will be observed that the birth-rate of Assam was higher than Bengal, Burma and North-West Frontier Province but lower than all the other provinces.

4. The total number of births registered during the year under report was 238,319 yielding a birth-rate of 30·06 per 1,000 of population as compared with 223,006 and 28·13 respectively in the preceding year.

Birth registration—general.

The number of births recorded in 1932 was higher than that of 1931 by 15,313. The quinquennial average was 27·34. As in the previous year the highest birth-rate (36·26) was recorded in the district of Sylhet followed by Cachar (32·88) and Goalpara (30·28). These three districts returned a birth-rate above, and the other five districts below the provincial average (30·06). From the table below it will appear that the lowest birth-rate is recorded in the Kamrup district (21·80). The sudden drop in the birth-rate in Kamrup and Nowgong districts since 1931 due to the ratios being worked out on the population of 1931 is more apparent than real as stated in the last year's report. There was a large increase of population in these two districts.

	1932.	1931.	1930.	1929.	1928.	1927.
Cachar	32·88	29·71	32·75	35·41	34·99	34·51
Sylhet	36·26	33·44	31·82	35·96	31·60	30·92
Goalpara	30·28	29·90	35·70	36·21	37·49	36·98
Kamrup	21·80	21·50	26·81	29·62	29·31	26·80
Darrang	26·64	25·75	32·20	30·73	30·70	27·84
Nowgong	21·85	21·57	31·59	32·13	30·62	27·97
Sibsagar	28·35	26·02	29·36	27·32	27·05	27·13
Lakhimpur	26·85	23·53	30·32	27·57	27·61	27·34

The highest birth-rate of 3·39 in December was followed by 3·33 in November. The lowest birth-rate was recorded in May.

During the year births exceeded deaths by 87,998 or 11·10 per mille of population. The number of males to every 100 females born was 106.

5. The total number of births registered in urban areas in the province in 1932, was 5,641 or 29·01 per mille of population, as compared with 5,072 or 26·23 respectively in the preceding year. The highest rate (56·18) was recorded in the town of Barpeta in the Kamrup district as in the last year followed by Palashbari (46·90) in Kamrup, Nowgong (36·59), Golaghat (35·62) in Sibsagar, Hailakandi (34·96) in Cachar, Sunamganj (33·23) and Maulvibazar (32·68) in Sylhet and Dhubri (31·37) in Goalpara. The lowest rate (13·16) was again recorded in the town of Doom Dooma in the Lakhimpur district as in the last year. The proportion of females to the males residing in the town is very low and the low birth-rate may be due to this. The birth-rate exceeded the death-rate in all towns except Tezpur, Mangaldai and North-Lakhimpur, the excess varying from 29·83 in Barpeta to 2·63 in Doom Dooma.

6. The total number of births registered in rural areas in the province in 1932 was 232,678 or 30·09 per mille of population, as compared with 217,934 or 28·18 respectively in the preceding year. The highest rate (51·86) was again recorded in the Kalaigaon circle in the Darrang district as in the last year followed by Lakhai (49·23) in Sylhet, Bokakhat (48·69) in Sibsagar, Fenchuganj (44·11) in Sylhet, North Lakhimpur (43·63) in Lakhimpur, Nabiganj (43·61) in Sylhet, Golokganj (42·40) in Goalpara, Baniachung (41·51), Rajnagar (41·03), Habiganj (40·99) and Sylhet (40·38) in Sylhet. The circles reporting low birth-rates are Digboi (6·11) in Lakhimpur and Kaliabor (7·08) in Nowgong. These low rates are probably partially due to defective registration. The proportion of females to males residing in these areas is low. It is remarkably so in Digboi.

Deaths and death-rates:—The death-rate of the province for the year under review was 18·96, as compared with 18·68 in the preceding year. A statement showing the comparison of the death-rate of this province and that of the other provinces in India is appended below:—

	Death-rate.		
	1927-31.	1931.	1932.
1	2	3	4
Assam	18·94	18·68	18·96
Bengal	22·6	22·31	20·5
Bihar and Orissa	24·6	26·6	20·6
Central Provinces	34·47	35·50	26·89
Madras	25·05	23·72	21·96
Burma	20·15	17·36	17·30
Bombay	27·88	23·82	23·04
United Provinces	25·03	26·97	22·23
Punjab	24·5	25·97	24·70
North-West Frontier Province	21·43	20·25	20·00

It will be observed that the death-rate of Assam was higher than that of Burma, but lower than that of any other province as in the preceding 2 years.

7. The total number of deaths registered during the year under report was 150,321 yielding a death-rate of 18·96 per mille of population, as compared with 148,117 and 18·68 respectively in the preceding year. The quinquennial average was 18·94.

The number of deaths reported from each district in 1932 is compared below with that of 1931:—

	1932.	1931.	Increase or decrease.
Cachar	10,397	11,632	—1,235
Sylhet	54,914	57,333	—2,419
Goalpara	20,973	19,019	+1,954
Kamrup... ..	15,064	12,658	+ 2,406
Darrang... ..	11,647	11,223	+424
Nowgong	8,631	7,821	+810
Sibsagar	15,931	15,926	+5
Lakhimpur	12,764	12,305	+459

Four districts, *viz.*, Cachar, Sylhet, Goalpara and Darrang returned death-rate above, and the other four below the quinquennial average.

The highest death-rate was recorded in the district of Goalpara (23·76) followed by Sylhet (20·16) and Darrang (19·91) during the year under report. The death-rate in the Nowgong district although higher than that of last year was the lowest in the province. The total mortality in 1932, was higher by 2,204 than in the previous year. The increase was mainly due to the larger number of deaths recorded under fever in Goalpara, Kamrup, Darrang, Nowgong, Sibsaagar and Lakhimpur, under cholera in Kamrup, Darrang and Sibsaagar and under small-pox in Goalpara, Kamrup and Sibsaagar. The number of male deaths to every 100 female deaths was 110.

The apparent fall in quinquennial average of birth and death-rates recorded in 1932, from those in the preceding year is due to the fact that calculations of 1931 figures were made on the census population of 1921 as the census population of 1931, was not available at the time when these ratios were worked out.

8. The total number of deaths registered in urban areas in which registration is compulsory was 3,340 which was 186 in excess of the figure of the previous year. The death-rate in 1932 was 17·17 per mille, as compared with 16·31 in the previous year and the quinquennial average was 16·74. In the undermentioned table is given the number of deaths, recorded under each of the seven main heads of mortality in towns in the years 1931 and 1932:—

Head of mortality.	1932.	1931.	Increase or decrease in 1932.
1	2	3	4
Cholera	76	65	+11
Small-pox	6	23	—17
Fevers	1,001	892	+109
Dysentery and diarrhoea	409	457	—48
Respiratory diseases	409	475	—66
Injuries	114	88	+26
All other causes	1,325	1,154	+171
Total	3,340	3,154	+186

The North-Lakhimpur town recorded the highest death-rate (29·72). A total of 63 deaths were recorded against 46 in the previous year. The respiratory diseases and other causes were responsible for the increase. Other towns reporting the high rates of mortality were Barpeta (26·35), Mangaldai (24·17), Tezpur (24·06) and Gauhati (22·71). Low rates were recorded in Tinsukia (8·72), Silchar (9·95), Hailakandi (10·49) and Doom Dooma (10·53). These low rates represent either better health conditions prevailing in these towns during the year or they may be due to defective registration.

9. The total number of deaths registered in rural areas in the province in 1932 was 146,981 or 19·01 per mille of population, as compared with 144,963 or 18·74 respectively in the preceding year. The quinquennial average was 18·99.

The number of deaths in rural circles under each of the main heads of mortality in the years 1931 and 1932 is contrasted in the sub-joined table:—

Head of mortality.					1932.	1931.	Increase or decrease in 1932.
1					2	3	4
Cholera	...	...	...	...	4,895	5,458	—563
Small-pox	...	...	...	...	625	571	+54
Fevers	...	...	...	...	97,210	92,297	+4,913
Dysentery and diarrhoea	...	...	...	...	7,832	8,942	—1,110
Respiratory diseases	...	...	...	...	4,949	5,420	—471
Injuries	...	...	...	...	1,735	1,788	—53
All other causes	...	...	...	...	29,735	30,487	—752
Total					146,981	144,963	+2,018

The highest rate was again recorded in the Kalaigaon circle (36·73) in the Darrang district. Other circles reporting the high rates were Bokakhat (35·21) in Sibsagar, Mankachar (34·63) in Goalpara, Udalguri (33·72) in Darrang, North Lakhimpur (31·87) in Lakhimpur, Golokganj (30·70) in Goalpara. The lowest rate was recorded in Digboi (6·29) in Lakhimpur, Kaliabor (6·35) and Loharighat (6·63) in Nowgong, Sorbhog (6·67) in Kamrup and Jamunamukh (6·76) in Nowgong. These incredibly low rates can only be due to defective registration.

Fever was mainly responsible for the high rates in each of the above-mentioned areas and other contributory causes being cholera in case of Golokganj and Udalguri, small-pox in case of Mankachar, dysentery and diarrhoea in case of Bokakhat, North-Lakhimpur and Udalguri, and respiratory diseases in case of North Lakhimpur.

10. Mortality was the highest (1·75) in the month of November and the lowest (1·22) in March. Fever was mainly responsible for the highest death-rate in November.

11. In parts of the Hill districts births and deaths are registered. The birth and death-rates in hill districts in 1932 are compared in the sub-joined table with those of the preceding year:—

Districts.		Population under registration.	1932.		1931.	
			Birth-rate.	Death-rate.	Birth-rate.	Death-rate.
1		2	3	4	5	6
Khasi and Jaintia hills...	...	64,128	24·31	14·64	26·45	18·85
Naga Hills	...	3,974	36·32	32·33	36·98	29·01
Lushai Hills	...	124,404	41·13	30·17	44·02	26·31
Garro Hills...	...	190,911	28·80	20·97	31·35	20·93

It will be seen from the above statement that the birth-rate in all the hill districts during the year under report was lower than that in the preceding year. An increase in the birth-rate is noticeable in all the plains districts. It is unexplainable why there should have been this disparity in the birth-rate in the hills and in the plains.

Khasi and Jaintia Hills.—The total number of births and deaths in the Khasi and Jaintia Hills were 1,559 and 938 respectively. The part of the Khasi and Jaintia Hills district in which births and deaths are recorded was free from cholera and small-pox. There were 12 cases of cholera with 9 deaths and 85 cases of small-pox without any death in other areas. The epidemics of small-pox were speedily controlled without much difficulty. The total number of persons inoculated against cholera was 858. Fever was responsible for 353 deaths, dysentery and diarrhoea for 63, respiratory diseases for 160, injuries for 1 and other causes for 356 deaths during the year under report. The total number of births and deaths recorded in Shillong in 1932 was 596 and 258 respectively, as compared with 548 and 259 respectively in the preceding year. The birth and deaths-rates per 1,000 of population work out to 27.98 and 12.11 respectively, as compared with 25.73 and 12.16 respectively in the preceding year. The town was free from cholera and small-pox, but was very highly malarial during four or five months of the year. Four hundred thirty-four boxes of quinine treatments were sold during the year 1932 against 374 in 1931. Twenty-one cases of enteric fever were notified as having occurred in the Shillong Municipality during the year, as compared with 25 and 57 cases in 1931 and 1930 respectively.

Thirteen cases of diphtheria occurred during the year against 9 and 7 cases in 1931 and 1930. All these cases recovered. The existence in the Pasteur Institute and Medical Research Institute of facilities for speedy diagnosis and treatment make it possible for nearly all cases of diphtheria to recover. To deal with the increase of malaria in Shillong a local Malaria Committee has been formed. In addition to anti-larval work which is in progress the Committee propose to carry out :—

- (1) Afforestation in certain areas.
- (2) Regular control of irrigation channels during the malarial season, and
- (3) Experimental work on the rice field area bordering the Umkhrak with a view to the elimination of a wet or irrigated crop from this area.

I commend the following extract from the report by Lieut.-Colonel D. L. Graham, O.B.E., I.M.S., Civil Surgeon, Khasi and Jaintia Hills, for consideration of Government “ I should like to bring to notice of Government the large amount of Tuberculosis which is occurring among its own Secretariat staff. Home conditions may account for some of this, but I cannot help feeling that many of the Secretariat offices are far from ideal in their construction, and a good deal more air and light could be let into many with advantage. This is a simple constructional matter in which very little expense need be incurred ”.

Naga Hills.—In the Naga Hills district registration of births and deaths is undertaken in the Kohima town and Dimapur rural circle, the combined population of which according to the census of 1931 is 3,974. The birth and death-rates as given against this district do not therefore accurately indicate the health of the whole district. The whole district was free from cholera and small-pox. The number of total deaths is 146 of which malaria is responsible for 91 deaths. Anti-malaria measures in Kohima and Dimapur are in progress.

Lushai Hills.—The total number of deaths was 3,753. The principal causes of deaths were respiratory diseases (2,004) fever (1,264), dysentery and diarrhoea (408). Respiratory diseases and malaria are responsible for the increased death-rate in the Lushai Hills district. The Civil Surgeon has taken with the existing Medical staff, some measures to minimise the number of mosquitoes in the Aijal town and other places where dispensaries are situated.

The campaign against syphilis has, as usual been carried out throughout the whole year with fairly good results. The majority of cases were found in the Lungleh subdivision. The Civil Surgeon, Lushai Hills has reasons to believe that most of the syphilis cases are cases of “ Yaws ”.

Garro Hills.—The birth-rate is lower than that of the last year. The death-rate in Garo Hills district was higher than in the previous year, and is attributed to larger number of deaths from malaria. The prominent diseases were malaria and *kala azar* which were more or less prevalent throughout the district. Malaria is on the increase whereas *kala azar* is gradually declining in the district.

Sadiya Frontier Tract.—In the Sadiya Frontier Tract Vital Statistics are recorded in Sadiya town, two tea gardens and two saw mills and in certain villages 634 births and 445 deaths were recorded in 1932, as compared with 612 and 411 respectively in the preceding year. As usual the largest number of deaths was returned under "Fevers". This district was free from cholera and small-pox.

Manipur State.—In the Manipur State births and deaths are not recorded. There were 5 cases of cholera with the same number of deaths. A total number of persons inoculated against cholera was 215 during the year under report.

Registrations in tea gardens. 12. The following table shows the birth and death-rates reported from tea estates during the year 1932, as compared with those of 1931.

Districts.	Birth-rate.		Death-rate.	
	1932.	1931.	1932.	1931.
1	2	3	4	5
Cachar ...	31.32	27.42	18.95	20.51
Sylhet ...	29.11	31.14	14.44	19.35
Goalpara ...	22.90	27.05	14.61	15.79
Kamrup ...	12.24	19.26	10.04	11.79
Darrang ...	21.00	20.74	13.85	13.76
Nowgong ...	31.02	28.67	15.83	16.77
Sibsagar ...	37.35	34.17	20.05	21.61
Lakhimpur ...	31.49	25.42	21.51	18.31
Total ...	30.82	28.26	18.21	18.91

The birth and death-rates in tea estates during the year under report were 30.82 and 18.21 respectively, as compared with 28.26 and 18.91 respectively in the preceding year. It is observed that the birth and death-rates in tea estates closely followed the provincial rates which are 30.06 and 18.96. The total births in tea states in 1932 were 30,173 and total deaths were 17,817, as compared with 27,673 and 18,515 respectively. The largest number of deaths (7,657) under "Other causes" was followed by 3,349 under "Respiratory" diseases, 3,240 under "Fevers" and 3,047 under "Dysentery and Diarrhoea".

A total of 75 deaths from *kala azar* was reported from tea estates in 1932 against 99 in 1931. As in previous years, tea gardens obtained Urea-stibamine for treatment of *kala azar* patients at the concession rate at which it is supplied to Government by the manufacturer. A total of 287 deaths from cholera was reported from tea estates. The Assam Labour and Emigration Act VI of 1901 which contained provision for compulsory submission of vital statistical returns by all tea estates was repealed during the year on the introduction of Tea Districts Emigration Labour Act, No. XXII of 1932 which contains no such provisions. It is however hoped that the tea estates will continue submitting the vital statistical and vaccination returns as before.

13. The total number of births and deaths registered within railway limits during 1932 was 130 and 165, respectively, as compared with 127 and 219, respectively, in the preceding year. Registration on railways. The largest number of births and deaths was reported from the Lakhimpur district as in the last year. The highest mortality (76) is due to other causes.

Mortality according to sex.—Seventy-eight thousand and five hundred ninety-three males and 71,728 females died in 1932 against 77,971 males and 70,146 females in the previous year. The death-rates 18.77 for males and 19.17 for females were in

excess by .15 for males and by .42 for females over those in 1931, but were less by 3.47 for males and by 3.03 for females than those of the previous quinquennium. The female death-rate exceeded the male death-rate in 7 districts. The highest death-rate for both sexes, *viz.*, 24.18 for males and 23.27 for females was returned from the Goalpara district. The lowest death-rate, *viz.*, 14.91 for males was reported from the Nowgong district and the lowest death-rate for females, *viz.*, 15.64 was reported from the Kamrup district.

Mortality according to class.—Classified according to classes 83,039 Hindus, 52,506 Muhammadans, 1,101 Christians, 237 Budhists, and 13,438 other classes died during 1932. The death-rates per mille are shown by classes in the subjoined table:—

Classes.				Ratio of deaths per mille 1931.	Ratio of deaths per mille 1932.	Difference.
1				2	3	4
Christians	...	...	...	11.52	14.01	+ 2.49
Hindus	...	...	...	16.83	17.20	+ .37
Muhammadans	...	...	...	18.70	19.14	+ .44
Budhists	...	...	...	16.81	21.65	+ 4.84
Other classes	...	...	...	54.33	50.28	— 4.05

The highest death-rate among the Hindus (19.75) was registered in Sylhet and among the Muhammadans (23.97) in the Goalpara district. The lowest rates (14.83 and 10.44) for these two principal communities were returned from Sibsagar and Kamrup, respectively.

Mortality according to age.—The rate of mortality by sexes in different age of groups and the excess or defect of female death-rate are shown in the undermentioned table:—

Age periods.				1932.		Excess or defect of female death-rate.
				Male.	Female.	
1				2	3	4
Under one year	...	...	...	166.05	146.51	— 19.54
1—5	...	...	...	52.67	71.52	+ 18.85
5—10	...	...	...	15.24	18.96	+ 3.72
10—15	...	...	...	4.66	5.22	+ .56
15—20	...	...	...	3.76	5.96	+ 2.20
20—30	...	...	...	17.56	25.47	+ 7.91
30—40	...	...	...	14.64	15.14	+ .50
40—50	...	...	...	12.25	8.92	— 3.33
50—60	...	...	...	11.81	7.96	— 3.85
60 years and upwards	...	...	...	65.27	47.85	— 17.42
Total	...	...	...	18.77	19.17	+ .40

The rate of mortality among infants for the year 1932 was higher than that of 1931 by 3·72, but lower than that of any of the other previous years as shown in the appended statement :—

Year.	Births.			Deaths of infants.			Death-rate of infants.		
	Males.	Females.	Total.	Males.	Females.	Total	Males.	Females.	Total.
1	2	3	4	5	6	7	8	9	10
1922 ...	100,433	94,465	194,838	21,268	17,361	38,629	211·76	183·78	198·20
1923 ...	101,861	95,657	197,518	19,367	16,089	35,456	190·13	168·19	179·50
1924 ...	110,107	102,648	212,755	21,636	17,671	39,307	196·49	172·15	184·75
1925 ...	103,009	96,252	199,261	19,009	15,733	34,742	184·53	163·45	174·35
1926 ...	108,967	102,266	211,233	21,029	17,403	38,432	192·98	170·17	181·94
1927 ...	107,461	99,828	207,289	19,253	16,266	35,509	179·16	162·94	171·35
1928 ...	110,774	103,283	214,057	20,233	16,587	36,820	182·65	160·59	172·01
1929 ...	116,177	108,417	224,594	19,374	15,987	35,361	166·76	147·46	157·44
1930 ...	110,400	104,345	214,835	20,166	17,310	37,476	182·66	165·75	174·44
1931 ...	115,139	107,867	223,006	18,465	15,624	34,089	160·37	144·84	152·86
1932 ...	122,845	115,474	238,319	20,398	16,918	37,316	166·05	146·51	156·58

Of the 238,319 infants born during the year 37,316 died. The largest number (19,774) died within one month of birth. Eleven thousand five hundred and seventy died in the age period over one month but not exceeding 6 months and 5,972 died in the period over six months but not exceeding 1 year. In the following statement the infant mortality rate for Assam is compared with those of other provinces in India.

Provinces.								Rates.
1								2
Assam ...	...	...	...	...	...	...	...	156·58
Bengal ...	...	...	...	...	...	...	...	178·9
Bihar and Orissa ...	...	...	...	...	...	...	...	128·08
Central Provinces ...	...	...	...	...	...	...	...	201·12
Madras ...	...	...	...	...	...	...	...	182·98
Burma ...	...	...	...	...	...	...	...	184·50
Bombay ...	...	...	...	...	...	...	...	156·39
United Provinces ...	...	...	...	...	...	...	...	162·72
Punjab... ...	...	...	...	...	...	...	...	178·52
North-West Frontier Province ...	...	...	...	...	...	...	...	129·34

The infant mortality rate in Assam is gradually and steadily declining. It compares favourably with those in other provinces yet it is distressing to think that one out of every six infants born should have died. The heavy mortality amongst infants is partly due to immaturity and ignorance of the mother, to improper feeding, to exposure of infants to all insanitary surroundings where in the causes of malaria, small-pox, measles, bowel complaints and *tetanus* abound. The operations of the Child Marriage Act should in due course improve matters.

The spread of education in regard to the care of babies is a crying necessity. The propaganda work of the Department had to be suspended on account of financial stringencies. This and all attempts to curtail expenditure in Public Health is to be depreciated as expenditure on Public Health besides yielding an immense return in human happiness is bound to produce great economic advantages. The economic loss involved in the birth and rearing of great numbers of children who do not live to make any return to the community, in the sickness and disease which debilitate a large proportion of the people and in early death is incalculable.

The number of still births recorded during the year was 8,851; as compared with 8,386 in the preceding year. The percentage of still births to live births was 3.71 in 1932 against 3.76 in 1931.

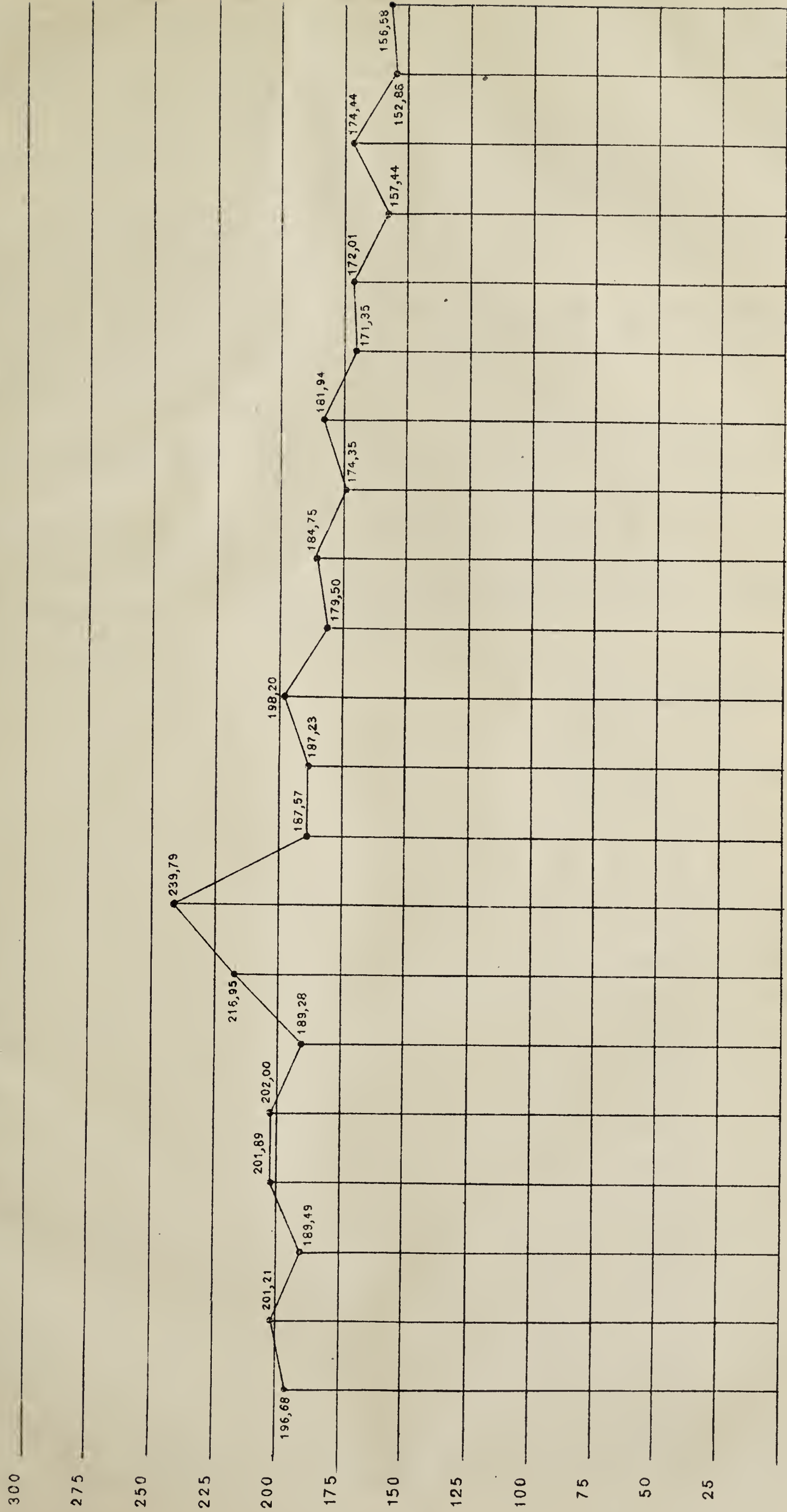
A chart showing the infant mortality in Assam from 1912 to 1932 is attached.

14. The statement below shows the defects in registration of vital statistics during the year 1932 in compulsory urban areas as ascertained by the Vaccination Inspecting staff.

Municipalities.	Unregistered vital occurrences during the year 1932.		Recorded vital occurrences.		Percentage of omissions.	
	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
1	2	3	4	5	6	7
Silchar ...	...	...	209	130	...	...
Hailakandi	...	...	70	21	...	...
Haflong	...	...	21	17	...	...
Sylhet ...	15	1	579	245	2.53	41
Karimganj	9	6	159	83	5.36	6.74
Maulvi Bazar	...	...	141	60	...	...
Habiganj	11	6	203	127	5.09	4.61
Sulanganj	...	...	177	86	...	...
Dhubri ...	4	7	292	143	1.35	4.67
Goalpara	...	...	152	75	...	...
Gauripur	...	...	158	81	...	...
Gauhati	24	2	571	493	4.03	40
Barpeta	14	6	760	357	1.81	1.65
Palashbari	3	...	159	76	1.85	...
Tezpur ...	7	6	234	241	2.90	2.43
Mangaldai	3	...	35	41	7.89	...
Nowgong	16	8	365	202	4.20	3.81
Jorhat ...	27	11	203	120	11.74	8.40
Sibsagar	...	...	125	96	...	...
Golaghat	11	7	156	80	6.59	8.05
Nazira ...	...	...	89	43	...	...
Dibrugarh	9	3	444	332	1.99	.90
North Lakhimpur ...	5	4	56	59	8.20	6.35
Doom Dooma	1	1	24	19	4.00	5.00
Tinsukia	2	4	98	41	2.00	8.89
Shillong	19	10	577	243	3.19	3.88

Compulsory registration has recently been introduced in Haflong since 1932. In the twenty-six municipal towns where registration is compulsory, the total number of persons prosecuted for failing to report vital occurrences during the year 1932 was 217 of whom 157 were convicted with fines amounting to Rs. 169-4-0.

Infantile Mortality (per 1,000 of Births) in the Province of Assam
from 1912 to 1932



1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932

It is satisfactory to note that a beginning has been made in Shillong to detect omissions in the registration of vital statistics. Nineteen births and 10 deaths were detected in the Shillong Municipality during the year 1932. No omission was detected in the towns of Silchar, Hailakandi, Haflong, Maulvibazar, Sunamganj, Goalpara, Gauripur, Sibsagar and Nazira.

15. The vaccination Inspecting staff verified the records of 51,053 births and 30,734 deaths in rural areas during the year, as compared with 52,190 and 31,364 respectively in 1931. The percentage of omissions detected was 5·87 in respect of births and 3·50 in respect of deaths, as compared with 6·91 and 4·10 respectively in the preceding year. The district of Sylhet stood first as in the previous year with 41,150 entries tested followed by Kamrup with 9,737 and Lakhimpur with 7,020. Darrang stood last with 1,922 entries tested.

Out of total births and deaths of 232,678 and 146,981 respectively only 51,053 and 30,734 respectively have been verified yielding 21.94 and 20.91 percentages. Until the strength of the inspecting staff be increased it will not be possible to undertake more extensive verification of vital statistics.

16. There was no change in the agencies for the collection of vital statistics either in urban or rural areas during the year. The system of granting rewards to Gaonburas for good work in reporting vital statistics was continued during the year. As usual weekly epidemic reports and monthly returns of vital statistics were regularly published in the Provincial Gazette and in certain local papers for the information of general public.

17. The statement showing month by month the number of coolies that left for Assam by different routes during the year 1932 is appended below :—

Months.						Total number of immigrants left for Assam during the year 1932.	
						Via Santahar and Amin-gaon.	Via Chandpur.
1						2	3
January	...	...	...	...	...	9,843	35
February	...	...	...	...	...	15,526	51
March	...	...	...	...	...	14,637	19
April	...	...	...	...	...	10,528	40
May	...	...	...	...	...	7,665	69
June	...	...	...	...	...	5,380	66
July	...	...	...	...	...	2,958	41
August	...	...	...	...	...	1,337	26
September	...	...	...	...	...	863	25
October	...	...	...	...	...	686	45
November	...	...	...	...	...	714	21
December	...	...	...	...	...	2,999	20
Total						73,136	458

The number of Immigrants that arrived at Naihati for Assam was 73,138, two of them deserted 73,136 therefore came to Assam. There were three cases of sickness among immigrants one of fever, one of colities and the other of infantile liver. The last one ended fatally, the others were discharged cured. Four hundred fifty-eight immigrants came to Cachar and Sylhet *via* Chandpur. There was only one admission at Goalundo for conjunctivitis.

The following statement shows the number of sick coolies treated month by month in the Emigration hospitals at Gauhati and Tezpur during the year 1932:—

Diseases.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<i>Tezpur—</i>													
Cholera ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...
Small-pox ... ..	...	...	1	...	...	...	...	...	...	...	1	...	2
Influenza	1	3	6	...	...	...	...	...	...	...	...	...	10
Chicken-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...
Malaria ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...
Conjunctivitis ... ..	...	...	...	1	1	...	...	...	...	...	...	...	2
Other causes ... ..	...	...	...	...	...	1	...	...	...	...	...	...	1
Dysentery and Diarrhoea ... ..	...	...	...	...	1	1	...	...	...	...	...	...	2
Total	1	3	7	1	2	2	...	...	...	...	1	...	17
<i>Gauhati—</i>													
Cholera ... ..	...	...	...	...	1	...	...	...	...	...	...	...	1
Small-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza ... ..	...	2	...	...	...	...	...	...	...	...	...	...	2
Chicken-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...
Malaria ... ..	...	3	2	1	...	2	...	...	1	1	1	1	12
Conjunctivitis	1	5	11	5	8	17	7	...	1	...	1	...	56
Other causes	1	12	5	2	1	2	1	1	...	...	...	1	26
Dysentery and Diarrhoea ... ..	...	...	1	2	1	1	...	...	...	...	...	...	5
Total	2	22	19	10	11	22	8	1	2	1	2	2	102

Six thousand seven hundred and fifty-five emigrants passed through the Tezpur Depôt during the year 1932 as against 6,145 in the previous year. The hospital buildings are newly constructed and *pucca* buildings of semi-permanent structure have been occupied from the middle of 1931. Some improvements to these buildings have been made by providing weather protection against the wall during the year.

18. *Railway coolie camps.*—During the year 1932 the Eastern Bengal Railway had a railway line under construction in the Province of Assam, *viz.*, Tangla-Belsiri-Rangapara Railway construction. For this construction a total of approximately 24,900 labourers were employed. There were eleven temporary camps which were selected near the stations. All stations and coolie camps were provided with tube wells for drinking water. Latrines were provided in several of the larger camps. Open fields and trenched latrines were also used. Anti-malarial measures were also carried out under the supervision of an Assistant Surgeon and some Sub-Assistant Surgeons. Oiling and toxic larvicides, Paris Greening and clearing of jungles was carried out. In July a cholera epidemic broke out in a *bustee* about one mile from Hugarajuli. Population of the *bustee* included some railway and contractors' staff numbering about 500. A tea garden Doctor and railway Sub-Assistant Surgeon took prophylactic and curative measures

against the epidemic. A Sub-Assistant Surgeon of the Public Health Department was also present to combat this disease. A total of 14,757 patients was treated in hospitals and dispensaries provided for the purpose of whom 2,683 were admitted for malaria, 6,189 for pyrexia of uncertain origin, 30 for cholera, 416 for dysentery, 1,164 for diseases of respiratory system, 1,345 for diseases of digestive system, 787 for diseases of skin and 1,063 for injury. The total number of deaths was 38 during the year 1932.

The following preventive measures were undertaken :—

1. Anti-malarial measures.
2. Labourers were persuaded to take boiled water.
3. Cholera inoculations were given to all railway employees and contractors' labourers. About 250 vaccinations were carried out against small-pox during the year.

No new construction was undertaken by the Assam-Bengal Railway in Assam during the year 1932. There were, however 4 coolie camps. *viz.*, Dittokcherra Ballast siding and Dittokcherra Boulder siding in Cachar district, Nailalang in Nowzong district and Bihubor quarry in Sibsagar district in connection with old lines. The population of these camps varied from 270 to 452. The coolie camp at Dhansiri was closed from 1st January 1932 and that of Bihubar quarry was opened from the 9th November 1932. All these camps were provided with latrines, and sweepers were engaged for conservancy. *Kutcha* huts were provided and their surroundings were kept clean. Good and sufficient quantity of drinking water was supplied. General health of the coolies during the year under report was satisfactory. Malaria was prevalent in the camps in the Cachar district. Hospital assistant and one compounder were entertained for treatment. The camp at Nailalang was used to be inspected by Hospital Assistant, Lumding.

There was no epidemic of cholera or Small-pox in any camp during the year.

CHAPTER III.

THE STATE OF PUBLIC HEALTH AND THE HISTORY OF CHIEF DISEASES.

19. *The State of Public Health in the Province.*—The data recorded in the preceding paragraphs will show that the state of Public Health in the Province during the year under review was satisfactory. As regards epidemic diseases, cholera and small-pox were conspicuous by reason of their low incidence. Plague is unknown in Assam. The mortality under head fever is however on the increase. With the exception of fever there was no other great outbreak of disease. There was a time when Assam used to be dreaded as being the land of *kala azar*. The marked decline in the incidence of this disease is due to intensive treatment campaign launched by the Government of Assam. This campaign has cost the Government of Assam a good deal of money at a time when it was not at all easy to spare such a large amount. Any money required for this campaign was ungrudgingly provided forthwith. The result is a victory over a scourge that was eating into the vitality of the province. Assam is not dreaded now. The improvement in the health condition undoubtedly due to the campaign against *Kala azar* and to the increased attention paid generally to matters of public health has led to a large increase in the population varying from 20 per cent. to 40 per cent. in individual districts during the decade 1921-31. The victory over *kala azar* and the experience gained in the long fight extending over a period of over 20 years justify the hope that with adequate funds it is quite possible even in Assam to mitigate human sufferings and to prevent a large number of premature deaths from preventable causes.

Chief causes of mortality.—A total of 1,50,321 deaths occurred during the year, 4,971 died of cholera, 631 of small-pox, 98,211 of fever, 8,241 of dysentery and diarrhoea, 5,358 of respiratory diseases, 1,849 of injuries, 31,060 of all other causes.

The following table shows the death-rates per mille from the chief causes of mortality during 1932 as compared with the decennium ending 1931.

Diseases.	1922-31.			1932.		
	Urban.	Rural.	Combined.	Urban.	Rural.	Combined.
1	2	3	4	5	6	7
Cholera	·62	1·25	1·23	·39	·63	·63
Small-pox	·14	·41	·41	·08	·08	·08
Plague ... ..	...	...	...	...	...	...
Fever	5·29	12·39	12·21	5·15	12·57	12·39
Dysentery and Diarrhæa ...	2·54	1·19	1·22	2·10	1·01	1·04
Respiratory diseases ...	2·25	·74	·78	2·10	·64	·68
Injuries	·46	·24	·24	·59	·22	·23
All other causes	6·21	3·97	4·03	6·81	3·84	3·91
Total	17·51	20·19	20·12	17·17	19·01	18·96

The death-rate for the year 1932 was less than the average rate by 1·16. There was a decrease under all heads except under "Fevers". Owing to the want of knowledge on the part of the reporting agency a number of diseases in which fever is a marked symptom are grouped under the general heading "Fever". In spite of this it is quite safe to conclude that malaria is prevalent throughout the whole province.

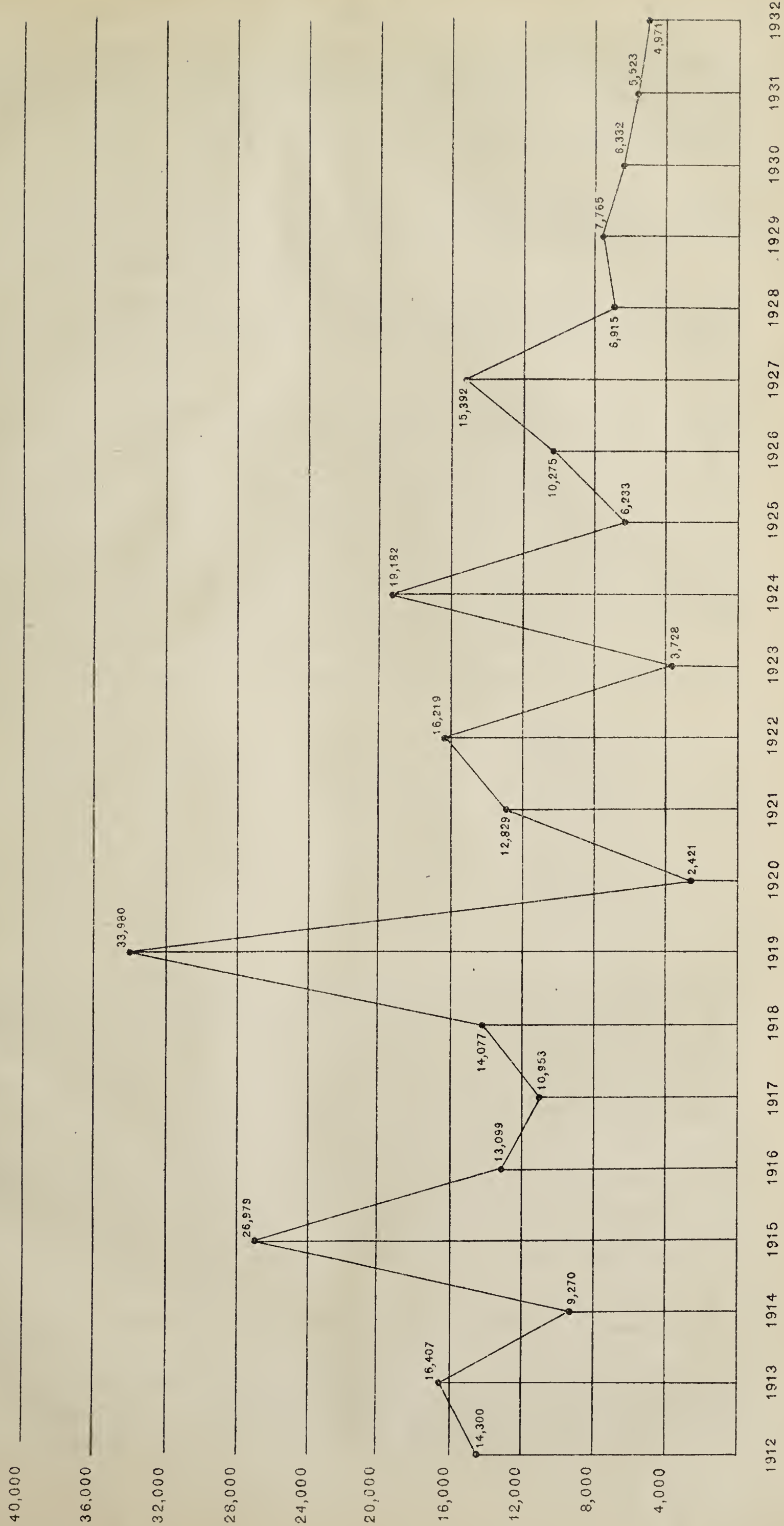
20. CHOLERA

Districts.	Death-rate per mille.	
	1922-31.	1932.
1	2	3
Cachar	1·14	·12
Sylhet	1·47	·53
Goalpara	1·23	·19
Kamrup	2·32	2·21
Darrang	1·28	1·08
Nowgong	·95	·05
Sibsagar	·37	·46
Lakhimpur	·20	·06
Total	1·23	·63

The total number of deaths from cholera during the year was 4,971 as compared with 5,523 in 1931.

The death-rate per 1,000 of population for the year was ·63, as compared with ·70 in the preceding year. The decennial average was 1·23. Cholera was responsible for 3·30 per cent. of the total deaths in the province in 1932. Deaths from cholera were reported from 102 out of 147 circles of registration and from 1,233

CHART NO II
Mortality from Cholera in Assam
from 1912 to 1932



villages out of 28,333 villages in the province. The annual seasonal peak in the incidence of cholera occurred in May (784) the death-rate then began to fall and it reached its minimum in November (94). Compared with that of the previous year the death-rate in February, March, April May, June, July, August, and September was higher. During the remaining four months the mortality was lower and it was very markedly so in November and December.

Two districts returned death-rates above the provincial average (.63). Kamrup with its rate of 2.36 topped the list and was followed by Darrang (1.14). The remaining districts returned rates below 1 per mille. The lowest rate .05 was returned from Lakhimpur and Nowgong.

During the year under report 76 deaths from cholera occurred in towns and 4,895 in the rural areas. Deaths from cholera was reported from eleven towns. Barpeta with 23 deaths heads the list and was followed by Sibsagar (21), Gauhati (13) and Habiganj (4).

Rural circle of Kamalpur in Kamrup reported the highest death-rate (5.93) per mille of population. The other circles reporting high death-rates were Rangia (4.75), Pattacharkuchi (4.67) in the same district. The gradual and steady decline in the incidence of cholera since 1927 reflect credit on the prompt preventive measures adopted. In order to make these measures more efficient and the control of outbreaks of cholera easier it is necessary to get village chaukidars and *gaon-buras* who are responsible for the reporting of outbreaks under the provisions of the rules published under Government Notification No 459M., dated the 28th February 1930 to realise their responsibilities in this respect and report the very first cases of the disease immediately they come to their notice. With a view to produce better effect in reporting the outbreaks of epidemic diseases the above rules are being translated into Assamese and Bengali for wide circulation.

The amount of cholera vaccine issued in the province since 1925 is shown below :—

1925	...	...	...	...	103,930 c. cs.
1926	...	...	...	...	154,760 c. cs.
1927	...	...	...	...	419,880 c. cs.
1928	...	...	...	...	237,778 c. cs.
1929	...	...	...	...	356,047 c. cs.
1930	...	...	...	...	220,532 c. cs.
1931	...	...	...	...	170,820 c. cs.
1932	...	...	...	...	169,317½ c. cs.

A total of 108,052 persons were inoculated in the province in 1932 excluding those inoculated in tea gardens. A total of 191,638 doses of bacteriophage were issued in the province during the year. Bacteriophage is being tried out in the Nowgong district and in the Habiganj subdivision. In these two areas no cholera vaccine is administered. As in the past years five mobile epidemic units each consisting of three Sub-Assistant Surgeons and six disinfectant carriers were employed, two in the Sylhet district and one in each of the district of Goalpara, Kamrup and Nowgong. Their services are utilised throughout the province whenever and wherever required. They deal with outbreaks of all diseases but more specially cholera, small-pox and malaria. The units in Nowgong and Habiganj are fully occupied in bacteriophage experiment. Their services are therefore not available for other duties. The epidemic units have justified the need for their existence. One unit at least in every district is very necessary. The expenditure in the appointment of more units, so necessary to control epidemics will, it may be confidently asserted, be amply repaid.

Chart No. II showing the provincial mortality from cholera from 1912 to 1932 is attached.

21. A total of 287 deaths were reported from tea estates during the year, as compared with 333 in the preceding year, the corresponding ratios per mille being .29 and .34 respectively. The tea estates in the district of Darrang recorded the highest rate (.90).

Cholera in tea estates.

22. Small-pox claimed 631 victims in the province in 1932 against 594 in 1931. The death-rate was .03 per mille compared with .07 in 1931 and .41 the mean of the previous ten years as shown in the table below :—

Districts.					Death-rate per mille.	
—					1922-31.	1932.
1					2	3
Cachar	...	...	...	...	.22	...
Sylhet	...	...	...	...	.34	.004
Goalpara	...	...	...	...	.57	.33
Kamrup	...	...	...	...	.57	.21
Darrang	...	...	...	...	.19	.04
Nowgong	...	...	...	...	.47	...
Sibsagar	...	...	...	...	.66	.06
Lakhimpur	...	...	...	...	.16	.05
Total					.41	.08

One hundred and ninety-five villages out of 28,333 villages were affected with small-pox in 1932. Of 147 rural circles 50 reported deaths from small-pox. Like cholera the seasonal peak occurred in May (132). The mortality then began to fall and it reached the minimum in December (16).

Two districts yielded death-rates from small-pox above the provincial average (.08 per mille). Goalpara with its death-rate of .33 per mille heads the list and is followed by Kamrup (.21). As in the previous year, the districts of Cachar and Nowgong were free from small-pox. The other district recorded death-rates below the provincial rate and the quinquennial mean. The lowest rate was recorded in Sylhet.

Only six deaths were reported from towns and 625 deaths from rural circles.

Fifty-six children below one year of age, 94 children between one and ten years of age died in 1932 from small-pox against 27 and 65 respectively in 1931. The rest, *viz.* 481 occurred among the adults.

The increase in the provincial mortality is small. It is mainly due to increase in the Goalpara and the Kamrup districts. This suggests that in the Assam Valley districts where the population is constantly growing due to immigration, the authorities concerned should be prepared to increase the number of vaccinators every year to cope with the increase in the number of people to be dealt with. It is an undoubted fact that deaths from small-pox can altogether be prevented by vaccination and revaccination and that this can be done at a very small expenditure.

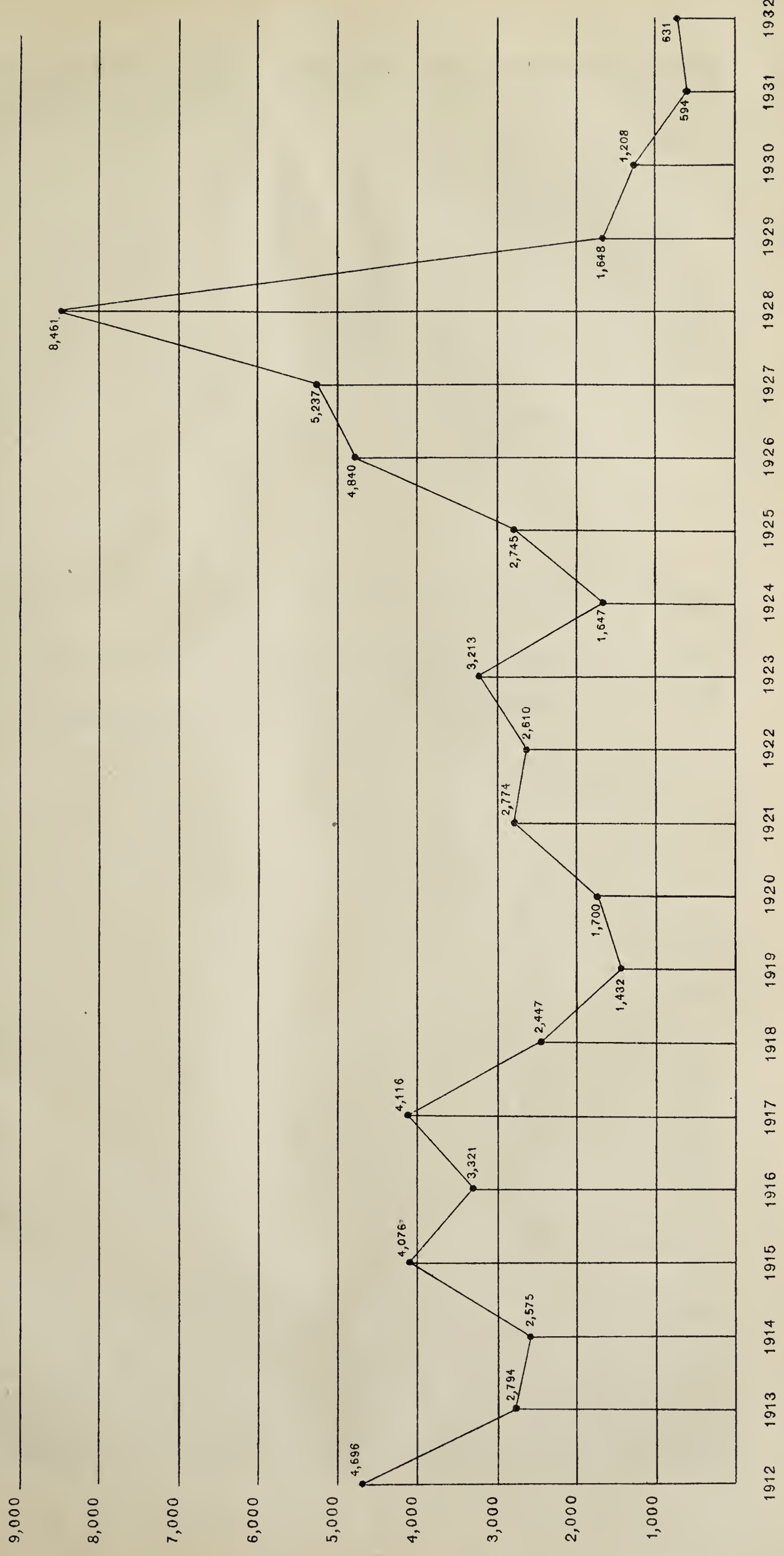
Chart No. III showing the provincial mortality from small-pox from 1912 to 1932 is attached.

23. Out of 25 towns 20 were free from this disease. Golaghat town in Sibhsagar, stood first (.43) followed by Dhubri (.11) in Goalpara. Among rural circles, Mankachar in the district of Goalpara reported the highest death-rate (2.93) per mille of population. Other high rates were reported from Dhubri (1.42) and South Salmara (.50) in the same district.

High rates of mortality from small-pox in individual towns and rural areas.

CHART NO III

Mortality from Small-pox in Assam
from 1912 to 1932



There is no special hospital in Assam for the isolation and treatment of small-pox. Particulars of cases treated in the infectious diseases hospitals where such exist are given in the appended table :—

Municipal towns.				Number of small-pox patients treated.	Vaccinated as evidenced by presence of one or more vaccination cicatrices.	Stated to have been successfully vaccinated but no vaccination cicatrices present.	Stated to be unvaccinated (or vaccinated unsuccessfully) and no cicatrices present.	Previously unvaccinated but vaccinated during the incubation of small-pox.	Stated to have been successfully vaccinated.
1				2	3	4	5	6	7
Dhubri	...	...	...	14	...	...	2	...	...
Shillong	...	...	...	...	...	...	...	...	...
Gauhati	...	...	...	1	...	...	1	...	...
Tezpur	...	...	...	2	2	...	...	...	...

Plague.

24. No case of plague was reported from any district in 1932.

25. Deaths from fevers in 1932 amounted to 98,211 against 93,189 in 1931.

Fevers.

The death-rate per mille was 12·39 during the year, as compared with 11·76 in the preceding year and 12·21

during the last decennium as shown in the table below :—

Districts.				Death-rate per mille.	
—				1922-31.	1932.
1				2	3
Cachar	...	...	...	10·91	11·07
Sylhet	...	...	...	12·75	11·61
Goalpara	...	...	...	20·71	22·20
Kamrup	...	...	...	10·67	10·31
Darrang	...	...	...	12·44	12·98
Nowgong	...	...	...	10·51	12·98
Sibsagar	...	...	...	8·82	9·89
Lakhimpur	...	...	...	8·44	9·43
Total				12·21	12·39

The number of deaths registered under head "Fevers" during the year 1932 was larger by 5,022 than that of previous year. Fevers accounted for 65·33 per cent. of the total provincial mortality against 62·91 per cent in the preceding year. The figures include deaths due to malaria and *kala azar* and also deaths from various diseases having fever as their predominant symptom. It is therefore not possible to determine what percentage of the total deaths under this head is due to malaria. It seems quite reasonable to take one-third of the total fever deaths to be due to malaria. The case mortality rate in malaria is very low, viz., about 1

per cent. On these calculations, the total number of persons suffering from malaria during the year comes to 3,273,700 or nearly two-fifths of the total population under registration. The question as to how the malaria problem in Assam in general should be tackled deserves the most serious consideration.

The largest number of deaths (9,880) was recorded in July, while the smallest (6,147) in March. The highest mortality rate from fevers was recorded in the district of Goalpara (22.20) in which *kala azar* was also prevalent and the lowest in Lakhimpur (9.43) which was least affected by *kala azar*.

In the district of Goalpara fever prevailed in an epidemic form towards the end of June which is attributed to a flood caused by the overflow of the banks of the Brahmaputra. The unusual prevalence of fever in the province during the year under report was brought to the notice of Government, and a grant of Rs. 5,000 was sanctioned for the purchase of quinine and cinchona which was distributed to indigent sufferers throughout the province.

Chart No. IV showing the provincial mortality from fevers for a series of years is attached.

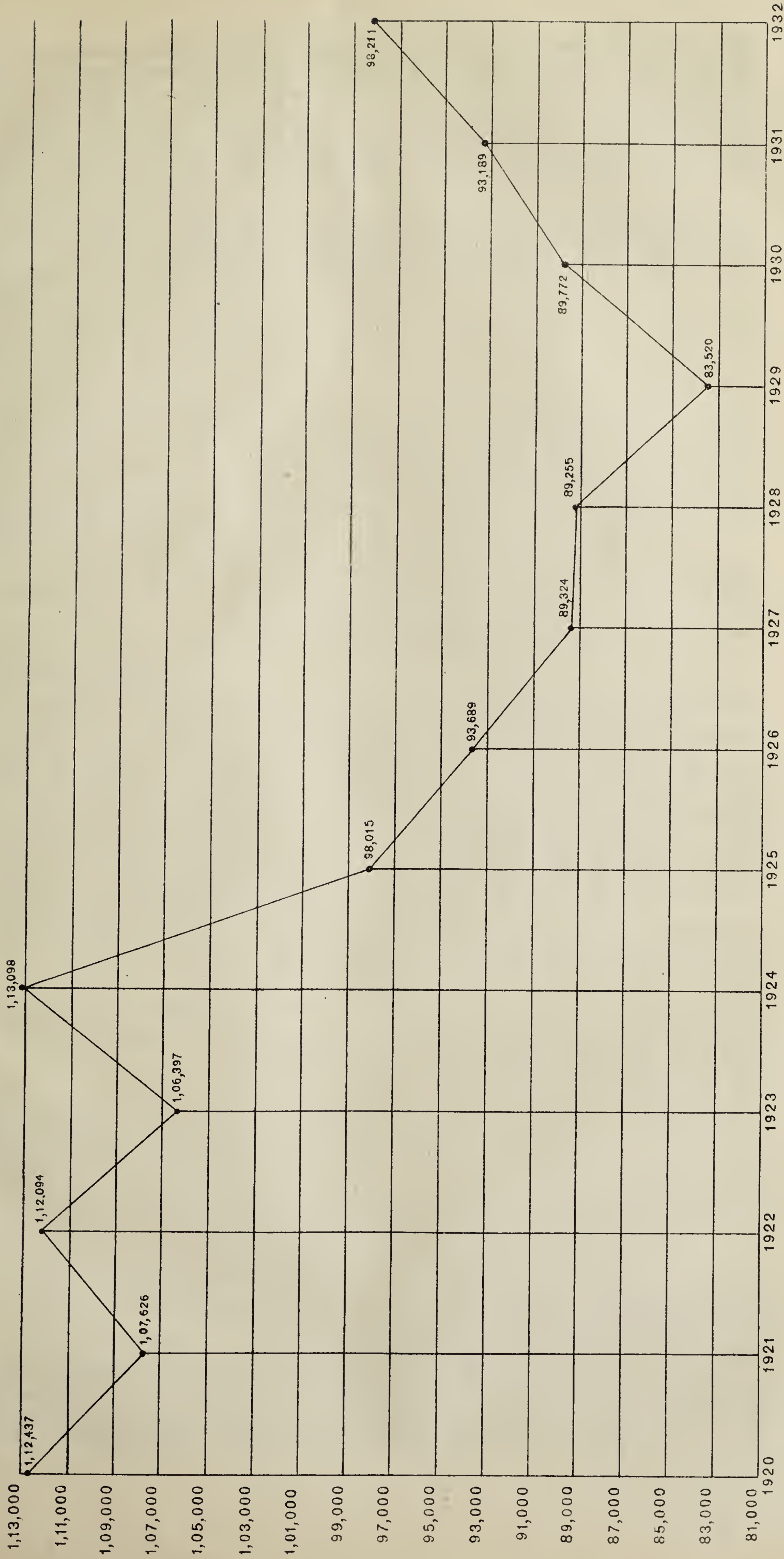
26.—DYSENTERY AND DIARRHŒA.

Districts.					Death rate per mille.	
					1922-31.	1932.
1					2	3
Cachar ...	...	...	...	...	2.21	1.66
Sylhet ...	...	...	...	...	1.26	.83
Goalpara ...	...	...	...	...	.27	.21
Kamrup ...	...	...	...	...	.61	.60
Darrang ...	...	...	...	...	1.53	1.61
Nowgong	...	...	...	...	.54	.44
Sibsagar ...	...	...	...	...	1.80	1.87
Lakhimpur	...	...	...	...	1.87	1.89
Total					1.22	1.04

The total number of deaths registered under this head was 8,241 during the year 1932 as compared with 9,399 in 1931. The death rate per mille of population was 1.04 during the year as against 1.19 in the preceding year. The decennial average was 1.22. The highest number of deaths (855) was recorded in June while the lowest (448) in March. The highest rate was returned from Lakhimpur district (1.89) followed by Sibsaagar (1.87) and Cachar (1.66). The lowest rate was recorded in the Goalpara district (.24). Compared with Bengal the mortality rate from this group of diseases is very high in Assam as shown below :—

					Death rate per mille.	
					1930.	1929.
1					2	3
Bengal ...	...	...	...	...	0.80	0.80
Assam ...	...	...	...	...	1.39	1.41

CHART NO. IV
Total number of deaths due to fevers



The conditions prevailing in Bengal and Assam are practically the same. It is therefore difficult to say why the death rate in Assam from dysentery and diarrhoea should be higher than that in Bengal. The difficulty in differentiating cholera from these group of diseases is common in both the provinces as the agency of registration is the same. The tendency of the people in Assam to conceal cholera cases may partly account for the increased death rate under this head. The hope that the use of Bacteriophage would reduce the number of deaths under this head has not yet been fulfilled.

Bacteriophage is being largely used in the Nowgong district since December 1929. The effect of Bacteriophage on dysentery and diarrhoea in this district does not appear to be very striking as the figures of mortality given below would indicate.

1929...	...	...	...	...	...	203
1930...	...	...	...	...	...	277
1931...	...	...	...	...	...	316
1932...	...	...	...	...	...	248

27. Respiratory diseases claimed 5,358 victims during the year under report as compared with 5,895 in the preceding year yielding death rates of .68 and .74 respectively. The quinquennial average was .73. The highest mortality from respiratory diseases (529) was registered in March and the lowest (368) in April. The Lakhimpur district heads the list with a death rate of 1.74 followed by Cachar (1.41) and Sibsagar (1.03). The lowest rate was recorded in the Goalpara district (.12).

28. During the year under review 1,849 deaths from injuries and 31,060 deaths from other causes were returned as compared with 1,876 and 31,611 deaths respectively in the preceding year. The corresponding ratios were .23 and 3.91 in 1932 and .24 and 3.99 respectively in 1931.

Typhoid fever.—During the year there was an outbreak of typhoid fever in the Gauhati town mainly in a localised area (Ujan Bazar) though sporadic cases occurred in all quarters. Sweetmeat shops and municipal markets were constantly inspected by Doctors and Municipal Health Officer. The possibility of the imported milk being the cause was carefully gone into. Steps were taken to prevent pollution of milk at the landing ghat at Ujan Bazar. Stools of a large number of Nepali milk dealers in Gauhati were culturally examined at the Pasteur Institute in an endeavour to discover a carrier. Widal tests were done on a number of sera at the Pasteur Institute to confirm the diagnosis. There was some evidence pointing to contamination of the pipe water in the area affected. Preventive inoculations were given to those contacts, who volunteered.

29. An outbreak epidemic dropsy type of beri-beri at Gauhati and a milder one in Shillong were enquired into in detail by this Department. No definite factor could be traced as being responsible for the causation of these outbreaks.

30. In course of his village survey a Sub-Assistant Surgeon, Public Health Department posted to the Kshetri *kala azar* Dispensary in the Kamrup district detected a number of yaws cases. The disease has been found to be widely distributed amongst the Rabhas, Kacharis, Garos and Khasis inhabiting the sub-montane region. A total of 1,669 cases have been treated since the beginning of the campaign in the Kamrup district with encouraging results.

Yaws has also been found to be prevalent in the Goalpara, Nowgong, Garo Hills, Sylhet, Khasi and Jaintia Hills and the Lushai Hills districts. Treatment has already been extended to the Nowgong and the Goalpara districts.

Vigorous treatment campaign in all these districts is necessary.

31. Selected Sub-Assistant Surgeons in charge of *kala azar* Dispensaries situated at a long distance from the existing Local Board or Government Dispensaries were asked to treat minor eye complaints, with the necessary drugs and equipments provided by the Medical Department. Due to delay in the supply of necessary drugs by the Medical Department only a few dispensaries could commence the treatment during 1932. Four hundred and sixty-four patients received treatment during 1932.

Kala azar. 32. The following table shows the number of deaths from *kala azar* from 1922 to 1932 :—

Districts.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.
1	2	3	4	5	6	7	8	9	10	11	12
Cachar ... ..	...	4	2	3	9	12	2	3	2	4	4
Sylhet	276	841	1,874	2,109	1,320	798	482	420	274	246	296
Goalpara	253	442	309	453	297	226	166	135	112	121	122
Kamrup	450	976	1,152	1,120	714	475	241	180	102	160	152
Darrang	202	259	448	478	474	318	258	241	185	222	155
Nowgong	933	1,291	1,479	1,445	839	528	260	178	132	129	132
Sibsagar	128	289	235	200	170	143	86	87	68	71	78
Lakhimpur	4	13	13	8	1	5	5	1	2	...	2
Khasi and Jaintia Hills	...	...	...	8	4	3	4	...	...	...	...
Naga Hills ... ..	...	...	...	1	...	...	...	1	1	...	1
Lushai Hills ... ..	...	...	...	...	1	...	1	...	...	...	1
Garó Hills	47	54	69	435	346	350	154	149	84	64	43
Sadiya Frontier Tract ...	...	2	4	3	1	1	1	1	...	...	1
Manipur State ... ..	...	...	...	2	...	...	...	...	1	...	...
Total	2,292	4,131	5,585	6,365	4,176	2,859	1,660	1,405	953	1,017	987

The following table shows the number of *kala azar* cases treated from 1922 to 1932 :—

Districts.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.
1	2	3	4	5	6	7	8	9	10	11	12
Cachar	210	352	253	442	333	359	394	470	376	370	391
Sylhet	5,148	9,278	16,516	10,934	16,355	10,527	8,988	9,162	6,726	5,512	4,719
Goalpara	2,731	4,176	5,016	6,003	5,671	3,495	2,316	2,389	1,439	992	1,089
Kamrup	2,700	4,018	5,780	8,758	7,301	6,445	3,577	2,598	1,814	1,690	2,061
Darrang	1,229	2,416	3,286	5,262	4,414	4,053	2,228	1,390	1,106	942	665
Nowgong	5,934	1,847	13,625	13,895	9,586	5,008	2,614	2,433	1,440	1,057	1,075
Sibsagar	1,307	2,143	2,929	3,285	2,658	1,521	1,555	2,387	1,495	1,095	1,269
Lakhimpur	12	68	81	99	20	19	28	23	23	3	12
Khasi and Jaintia Hills	59	120	274	213	198	120	6	...	...	...	...
Naga Hills ... ..	...	4	3	4	2	1	5	9	21	5	16
Lushai Hills ... ..	...	...	...	...	...	...	...	...	...	4	2
Garó Hills	329	589	985	1,952	2,812	1,823	1,690	2,905	1,905	882	605
Sadiya Frontier Tract	...	...	...	8	4	3	8	3	2	2	1
Manipur State ... ..	...	...	22	85	31	36	166	35	83	38	53
Total	19,659	35,071	48,770	60,940	49,385	33,415	23,576	23,804	16,430	12,592*	11,958

* Includes 2,833 cases as continuing from 1930. This was omitted in the last year's report through oversight.

The number of deaths from *kala azar* was less in 1932 by 30 than that of the preceding year. The conditions in individual districts appear to have remained practically the same as in the last year. The number of patients treated fell from 12,592 in 1931 to 11,958 in 1932. The method of diagnosis and treatment of *kala azar* was the same as on previous years. The treatment throughout the province is by no means of intravenous injections with Urea-Stibamine.

Neo-stibosan, a new drug tried extensively at the Calcutta School of Tropical Medicine and Hygiene and in this province was also adopted for treatment of *kala azar* during the year under review. Its administration is limited to

in-door patients and to such out-door patients as voluntarily accept it. As usual special attention was paid in all districts to intensive and detailed survey in order to detect fresh cases. Villages within a certain radius of dispensaries in *kala azar* infected districts are surveyed by the medical officers in charge. Sub-Assistant Surgeons are specially deputed to survey other areas where a recrudescence of the disease is suspected. No recrudescence was reported from Cachar. In Sylhet no new dispensaries were opened. Two Public Health Department dispensaries were closed. The whole district of Goalpara especially the Goalpara subdivision was thoroughly surveyed and the cases detected were given facility for treatment. The *kala azar* dispensary at Basugaon was closed in view of the marked decline in the number of *kala azar* cases in it. Two out-centres one at Kuriamari and the other at Balarbhita were opened for treatment of a number of cases detected by special survey beyond Rangjuli area. In Kamrup there was an increase in the number of fresh cases. An extensive survey was carried out in Tambulpur and Goreswar areas and cases were directed to go to the nearest centres for treatment. No special dispensary was opened or closed during the year. In Darrang Khoirabari and Paschimpatla area was surveyed and a dispensary at Khoirabari was opened. In Nowgong village surveys were done by all Sub-Assistant Surgeons in charge of *kala azar* and Local Board Dispensaries. In these surveys house to house visits were strictly enforced. In the Garo Hills *kala azar* was prevalent more or less throughout the district. The more affected areas are Bajendoba, Fulbari and Dainadubi. During the year under report the number of beds in the Tura *kala azar* Hospital was reduced from 100 to 50, in the Bajendoba *kala azar* Hospital from 50 to 30, and in the Dainadubi *kala azar* Ward from 30 to 15. The in-door *kala azar* Ward attached to the Bagmara Dispensary was closed. Besides these there were *kala azar* treatment centres at Dalu, Bagmara, Mahendraganj and Fulbari. The *kala azar* survey work was done by the Sub-Assistant Surgeons who were all hill-men, and all detected cases showing positive results were reported to the Deputy Commissioner who compelled them to come under treatment. Kukodunga, Marangi and Charingia areas in the Sibsagar district were surveyed by a special Sub-Assistant Surgeon. The number of patients detected was small and they were directed to undergo treatment in the existing dispensaries. In the present quiescent state of *kala azar* it has been found possible to allow Sub-Assistant Surgeons in charge of the special *kala azar* Dispensaries to treat other diseases such as Yaws, Leprosy, Malaria and minor eye complaints, etc. It is essentially necessary to maintain the *kala azar* operations in their present form in order to prevent or to minimise the chances of recrudescence of this deadly scourge by sterilising the fresh cases as early as possible by treatment. On the other hand the tendency of Yaws, Leprosy and Malaria to spread demands that these diseases should be tackled without further loss of time.

33. During the year under report 39 Public Health Dispensaries, viz.,
 Leprosy. 16 in Sylhet, 3 in Goalpara, 4 in Kamrup, 8 in Nowgong, 4 in Darrang and 4 in Sibsagar were selected for treatment of leprosy and arrangement for the purchase

of the necessary medicines and equipment were made. The Sub-Assistant Surgeons were trained in the technique and treatment of leprosy. Due to delay in giving the Sub-Assistant Surgeons necessary training in the technique of treatment and also obtaining the drugs and equipment only one Public Health Dispensary in the Darrang district could start treatment during the year under review. Sub-Assistant Surgeons on *kala azar* survey duty do the leprosy survey in conjunction with the *kala azar* survey. During the year leprosy pamphlets in English, Bengali and Assamese received from the Assam Leprosy Committee were distributed through the Director of Public Instruction, Registrar, Co-operative Societies, Local and Municipal Boards and the Assistant Surgeons and Sub-Assistant Surgeons of the Public Health Department. A contribution of Rs. 2,500 from the Assam Leprosy Relief Committee and Rs. 2,000 from the Assam Branch of the Indian Red Cross Society for the purchase of medicines and equipment for treatment of lepers in Public Health dispensaries were received during the year. One thousand one hundred and forty-two lepers have come under treatment in the Public Health Department Dispensaries up to the end of May 1933.

Leprosy clinics have been established in all districts. All Public Health dispensaries and some selected Local Board Dispensaries are treating this disease. The dispensaries have been provided with necessary equipments.

The proposal for the establishment of a leper hospital at Jorhat has not materialised for want of funds. In Kamrup Sub-Assistant Surgeons of the Public Health Department have been trained in diagnosis and technique of modern treatment at the Gauhati hospital. Pamphlets on preventive measures supplied by the Public Health Department were widely distributed in the district.

CHAPTER IV.

EPIDEMIOLOGY.

34. This consisted of six temporary Assistant Surgeons, 85 Sub-Assistant Surgeons, who until recently devoted their whole attention to the detection and treatment of *kala azar* patients. Fifteen Sub-Assistant Surgeons and 30 Disinfectant Carriers belonging to the Epidemic Units were also on Epidemic duty during the year under review. The following table shows the total *kala azar* cases treated since 1922 :—

1922	...	...	...	...	...	19,659
1923	...	...	...	...	...	35,071
1924	...	...	...	...	...	48,770
1925	...	...	...	...	...	60,940
1926	...	...	...	...	...	49,385
1927	...	...	...	...	...	33,415
1928	...	...	...	...	...	23,576
1929	...	...	...	...	...	23,804
1930	...	...	...	...	...	16,430
1931	...	...	...	...	...	12,592
1932	...	...	...	...	...	11,958

Everywhere in the province *kala azar* is showing signs of decline. Regulations framed under the Epidemic Diseases Act require *kala azar* patients to undergo a complete course of treatment in a *kala azar* dispensary.

CHOLERA.

Deaths from Cholera.—The number of deaths from Cholera during the last ten years was as follows :—

1922	...	...	...	...	...	16,219
1923	...	...	...	...	...	3,728
1924	...	...	...	...	...	19,182
1925	...	...	...	...	...	6,233
1926	...	...	...	...	...	10,275
1927	...	...	...	...	...	15,392
1928	...	...	...	...	...	6,915
1929	...	...	...	...	...	7,765
1930	...	...	...	...	...	6,332
1931	...	...	...	...	...	5,523
1932	...	...	...	...	...	4,971

In view of the existence of the Epidemic Units, prompt preventive measures are possible. Three epidemics of Cholera occurred during the year. The manufacture of cholera vaccine and cholera bacteriophage in the Pasteur Institute and Medical Research Institute also make it possible to deal with an epidemic of cholera more efficiently now. The following quantities of cholera vaccine and bacteriophage were issued during the year :—

Cholera vaccine	...	...	...	...	169,317½ c.cs.
Bacteriophage	...	...	...	...	191,618 doses.

In Kamrup sporadic cases of cholera occurred in the north bank in November and December 1931 mainly in the Sorbhog and Barpeta areas, the first outbreak of some severity occurred in the latter part of March. It was in the riverine areas on the north bank that the disease assumed an epidemic form. Sporadic cases occurred in a few villages near Polashbari. The severity of the outbreak was noticed in the Kamalpur area. The infection spread from Kamalpur *via* the Sessa and Puthimari rivers to the Hajo area. The water in these streams was extremely low and practically stagnant and this forms almost the sole water-supply of the villages along its banks.

In the Barpeta Subdivision the area chiefly affected was between the Mora Monas and the Pahumara rivers. Here also the infection was traced to the streams.

This out-break was spread by villagers throwing cholera corpses (and washing fomites) in the rivers thereby infecting the water-supply over a wide area. There are instances in which information of an outbreak reached the authorities a week later the first case had occurred in the village.

The Sibsagar epidemic started in a small group of cases at Nazira which is on the bank of the Dikhu river. The infection was carried down along the river infecting most of the villages. This started an epidemic in the villages lying along the river Dikhu. Epidemic staff including an Assistant Director of Public Health and an Assistant Surgeon and Sub-Assistant Surgeons were promptly detailed to combat the disease. Most of the villages having got the infection direct from the river, the Epidemic flared up suddenly specially as the area was not visited by any great epidemic of cholera since 1919. Fishermen were the worst sufferers. The disease spread amongst them rapidly by human contact. Prompt prophylactic measures were taken in co-operation with Civil Subdivisional Officer, Chairmen, Local Board and Municipal Board. People were inoculated, bazars and schools were closed. Many cases were treated with bacteriophage. Cholera leaflets were distributed. Reserved tanks were guarded. Steps were taken for proper disposal of vomitted matter and excreta, soiled linen were burnt and replaced and doles of rice were given to the infected poor fishermen class as the only means of the livelihood of most of these people by selling fish were stopped. The prompt action and efficient organisation quickly stopped the epidemic.

In the Darrang district the epidemic first started in a group of villages in the tea gardens 10 miles east of Bishnath during September and October. A man from Bishnath had been to Monabari *hát* in the infected area during the middle of October and he carried the disease to Bishnath and died there. The river Giladhorî originates from the Brahmaputra and flowing through the Majuli south of Sootea and Jamuguri with slow and sluggish current, again empties itself at the Brahmaputra further down. This stream was infected from cases at Bishnath. Many villagers from different villages from Sootea and Jamuguri circles had collected along the Giladhorî for cutting thatching grass. Many of these got ill between second and third week of November and some died there. This caused a panic amongst them and almost all fled away to their respective homes, some with the disease. Then followed other cases in their respective villages and it then began to spread from village to village in sporadic form.

CHAPTER V.

FAIRS AND FESTIVALS.

35. No fairs or festivals of large magnitude are held in this province, and no case of infectious disease was reported from any fair held in the Province during the year 1932.

In the district of Cachar two *melas* viz., Sidheswar and Bhuban Hill *melas* were as usual held during the year. The former lasted for 15 days and the latter for five days with a gathering of approximately 6,000 and 3,000 people respectively. Necessary sanitary arrangements were carried out by the *mela* authorities under the direction of the Assistant Director of Public Health, Surma Valley and Hill Division. A section of an epidemic unit visited both the *melas*. The district Branch of the Red-Cross Society rendered valuable services by detailing boy scouts.

There was a gathering of about 10,000 people in the town of Dhubri during Brahmaputra *Snan* (Bathing). Temporary latrines were constructed and necessary arrangements for sanitary measures and for the supply of pipe-water to the people were made. Assistant Surgeon, Sadr, Sub-Assistant Surgeons and Urban Health Officer were deputed to look after the sanitary arrangements. In the district of Kamrup the Darranga *mela* was held, as usual. This *mela* was visited by the Director of Public Health, Assam (Lieutenant-Colonel T. D. Murison, I.M.S.) accompanied by the Assistant Surgeon of the Public Health Department. On the occasion of the Hindu festival "Ambubachi" there was a large gathering of pilgrims at the Kamakhya Hill, in the same district. A Doctor was deputed to render medical aid. There was no out-break of any epidemic.

CHAPTER VI.

URBAN SANITATION.

(Including notified areas.)

MUNICIPAL WATER-SUPPLIES.

36. There were 17 Municipal Boards and 9 Town Committees as in the previous year. The total income of these municipal boards and town committees was Rs. 13,48,554 in 1932, as against Rs. 14,22,176 in the preceding year. A sum of Rs. 5,45,568 or 40·46 per cent. of the total income was spent on sanitary works, original and recurring as compared with Rs. 5,97,683 and 42·02 respectively in 1931.

The percentage of expenditure on public health in each of the municipalities and towns in 1932, as compared with that in 1931, was as follows :—

—			1932.	1931.
1. Gauripur Town Committee ...	...	...	62·82	35·04
2. Nazira ditto ...	...	...	54·10	47·86
3. Silchar Municipal Board ..	...	...	53·00	60·91
4. Habiganj ditto ...	...	...	51·69	51·35
5. Jorhat ditto ...	...	...	50·69	39·73
6. Tezpur ditto ...	...	...	47·90	40·76
7. Dhutri ditto ...	...	...	46·38	53·99
8. Sylhet ditto ...	...	...	43·56	43·66
9. Tinsukia Town Committee ...	...	...	42·95	39·53
10. Dibrugarh Municipal Board...	...	...	41·67	41·40
11. Shillong ditto ...	...	...	39·69	30·21
12. Golaghat ditto ...	...	...	39·38	24·63
13. Nowgong ditto ...	...	...	39·07	66·13
14. Haflong Town Committee ...	...	...	38·54	44·82
15. Goalpara Municipal Board ...	...	...	35·12	36·25
16. Gauhati ditto ...	...	...	34·79	43·69
17. Karimganj ditto ...	...	...	34·05	32·74
18. Polashbari Town Committee...	...	...	32·32	59·95
19. Mangaldai ditto ...	...	...	31·49	22·77
20. Doom Dooma ditto ...	...	...	30·66	41·99
21. Sunamganj Municipal Board	...	...	28·93	28·17
22. Barpeta ditto ...	...	...	28·83	53·50
23. Maulvi Bazar ditto ...	...	...	27·87	24·00
24. Hailakandi Town Committee	...	...	27·50	32·82
25. Sibsagar Municipal Board ...	...	...	26·80	24·25
26. North Lakhimpur Town Committee	...	...	15·35	37·83

The following statement shows the expenditure for public health purposes during the year 1932, as compared with that of 1931 :—

Heads of expenditure.	Total expenditure.		Difference.	
	1932.	1931.	Increase.	Decrease.
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
1. Conservancy including Establishment, road, watering, latrine, etc.	3,01,729	2,84,028	17,701	...
2. Drainage	32,268	44,414	...	12,146
3. Water-supply	1,51,902	1,54,150	...	2,248
4. Disposal of dead	634	496	138	...
5. Markets and slaughter houses	21,560	71,923	...	50,363
6. Vaccination	4,767	5,778	...	1,011
7. Pay of Health Officers and Sanitary Inspectors	3,604	7,927	...	4,323
8. Epidemic charges including up-keep of Contagious and Infectious Diseases Hospitals.	7,231	11,115	...	3,884
9. Other sanitary works	21,873	17,852	4,021	...
Total	5,45,568	5,97,683	...	52,115
10. Construction and maintenance of roads	1,81,928	1,90,353	...	8,425
Total including roads	7,27,496	7,88,036	...	60,540

The increase of Rs. 17,701 under the head "Conservancy" was mainly due to increase in Dibrugarh, Nowgong, Dhubri and Haflong. Dibrugarh Municipal Board purchased two motor lorries during the year. This is very satisfactory as it indicates more attention to surface cleanliness and to the speedy disposal of night-soil. The only other head under which larger expenditure was incurred was "Other sanitary works".

There was a decrease of Rs. 73,622 in the income of the municipal boards and this explains the fall in the expenditure under the other heads.

As usual the Director of Public Health and Assistant Directors of Public Health inspected municipalities and small towns and offered their advice on public health matters. As pointed out in the inspection notes on various municipalities there is much to be desired in every direction in the matter of public health of the towns in the province.

The Public Works Department incurred a total expenditure of Rs. 7,999 on the maintenance of water-supplies, drainage and town improvements in 1932, as compared with Rs. 16,888 in 1931.

CHAPTER VII.

RURAL SANITATION.

37. The total expenditure of 19 Local Boards on public health during the year 1932 amounted to Rs. 1,74,011 as compared with Rs. 2,12,738 in the preceding year. The expenditure was incurred on the following items :—

	1932.	1931.
	Rs.	Rs.
1. Conservancy including Establishment, road watering, latrine, etc.	366	73
2. Drainage	114	481
3. Water-Supply	78,850	1,04,378
4. Disposal of dead ... ..	...	...
5. Markets and Slaughter houses	8,201	8,981
6. Vaccination	40,335	49,063
7. Pay of Health Officers and Sanitary Inspectors ... ..	...	893
8. Epidemic charges including up-keep of Contagious and Infectious Diseases Hospitals.	19,417	21,587
9. Other sanitary works	26,698	27,282
10. Construction and maintenance of roads	4,70,539	5,24,936

The expenditure of individual boards was as follows :—

						1932.	1931.
						Rs.	Rs.
Dhubri	...	...	...	...	...	43,811	43,397
Habiganj	...	...	...	...	...	24,222	29,534
Gauhati	...	...	...	...	...	14,912	21,110
Dibrugarh	...	...	...	...	...	13,052	14,287
Nowgong	...	...	...	...	...	9,775	7,398
Mangaldai	...	...	...	...	...	9,316	7,640
Sunamganj	...	...	...	...	...	7,609	7,736
Tezpur	...	...	...	...	...	7,405	10,802
Goalpara	...	...	...	...	...	7,145	22,752
Karimganj	...	...	...	...	...	5,837	4,861
Jorhat	...	...	...	...	...	5,759	6,830
Sibsagar	...	...	...	...	...	5,486	6,023
Silchar	...	...	...	...	...	4,340	3,924
Sylhet	...	...	...	...	...	4,128	4,686
Maulavi Bazar	...	...	...	...	...	3,894	6,326
Barpeta	...	...	...	...	...	3,440	4,353
Golaghat	...	...	...	...	...	2,007	3,249
North Lakhimpur	...	...	...	...	...	1,077	4,915
Hailakandi	...	...	...	...	...	766	2,910

Boards should make every endeavour to increase their expenditure on water-supply. Civil Surgeons report that there are numbers of villages in which potable water is not available and it is in these villages that Cholera makes its appearance year after year. Boards should provide tanks or wells as may be suitable in consideration of local circumstances. They should be provided with water lift and fence in order to prevent direct access of the public to the water. The protection of water from contamination is most important and should not be ignored. The smaller expenditure on public health by local boards is to be regretted. In view of the fact that 97 per cent. of the inhabitants of Assam live in villages, the health and prosperity of the rural population is a matter of vital importance. If Cholera which is endemic in Assam is to be prevented, supply of good drinking water and ample provision for drugs and epidemic staff are essential. Under both of these two heads expenditure was less than that in the preceding year. The same remarks are applicable to lesser expenditure under head vaccination. Public Health measures which are extensively carried out in rural areas are protection against Cholera by inoculation and against small-pox by vaccination. *Kala azar* treatment measures have been carried on as in previous years. For the treatment of malaria, quinine in treatment form is sold in all village post offices and through other agencies.

Treatment of Yaws, Leprosy, Malaria and minor eye complaints is also being undertaken by Public Health Department dispensaries in rural areas.

CHAPTER VIII.

38. Malaria may be controlled in two ways. One of which is mechanical, the other medical. Mechanical control is effected by draining pools, ponds and ditches so as to deprive the Anopheles of the stagnant water on the surface of which its eggs are laid and so making propagation difficult. By pouring suitable larvicides on the surface of stagnant water so that the larvæ are killed by being deprived of air, or by treating the water with chemicals which destroy the larvæ. By protecting houses and beds with gauze and mosquito-netting and by destroying the anopheles on a large scale by spraying. All the methods although useful in combating malaria have their draw backs. The drainage methods cannot be put into effect in all rural areas as the rice fields, etc., must be kept under water. The other methods also are for some reason or other impracticable and when the area to be dealt with is large it is almost always not within financial possibilities to adopt the mechanical methods. The difficulties with the medical methods are much less. It consists in the systematic administration of quinine and other synthetic drugs both as preventive and as a cure. The only suitable anti-malaria measure for the province as a whole would seem to be to make quinine available as much as possible and as cheaply as possible to bring it within the reach of the indigent sufferers. The only defect of this method is that the patient is sure to consider himself cured of malaria by the termination of first attack of fever whereas quinine must be continued until all parasites remaining in the blood has been destroyed. This drawback can be corrected by spread of education by means of extensive propaganda.

As in previous years quinine as a preventive and curative measure against malaria was sold below cost price throughout the province through post offices and other agents. Detailed instructions as to its administration are given with each treatment. A patient can easily treat himself without the aid of a medical man. In areas in which malaria broke out with unusual virulence quinine was distributed free to indigent sufferers as it was thought that due to economic depression it was not possible for such patients to purchase quinine sold at annas 4-6 per tube.

A lump provision of Rs. 26,000 was passed by Government for anti-malaria measures in the Province. The Provincial Malaria Committee met five times during the year to allot grants to various local areas for anti-malarial measures.

The present policy is that municipalities and local boards when they undertake anti-malaria work, put aside a lump sum which is supplemented by government grants on condition that the work is carried out on lines approved by the Provincial Malaria Committee.

Both the Assistant Directors of Public Health are trained in Malariology. Anti-malaria work has been undertaken by the Assistant Directors of Public Health independently in some areas and by the Assam Medical Research Society in co-operation with the Department in others. Assam Medical Research Society is in receipt of an annual contribution from Government and the services of 8 Sub-Assistant Surgeons are placed at the disposal of the Society for duty in areas in which anti-malarial work is undertaken by the Society. The Malaria Research Officer in the employ of the Assam Medical Research Society holds a training Class in Shillong in which both theoretical and practical training in anti-malarial methods is given to the Sub-Assistant Surgeons and others. The course includes field training as well.

Malarial surveys and anti-larval measures were carried out in the following localities during the year :—

SYLHET DISTRICT.

Sylhet	By the Assistant Director of Public Health, Surma Valley and Hill Division.
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Tahirpur	...	}	Ditto.	ditto.
Jaintiapur	...			
(Uttarpurbhag)	...			

GOALPARA DISTRICT.

Kachugaon...	...	}	By the Assistant Director of Public Health, Assam Valley Division.
Gossaingaon	...		
Haltugaon ...	...	

CACHAR DISTRICT.

Haflong	}	By the Assam Medical Research Society.
Maibong ...	...	
Hailakandi...	...		

KAMRUP DISTRICT.

Gauhati	By the Assam Medical Research Society.
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NOWGONG DISTRICT.

Nowgong	}	By the Assam Medical Research Society.
Lumding		

SIBSAGAR DISTRICT.

Sibsagar	}	By the Assam Medical Research Society.
Golaghat ...	...	
Jorhat ...	...	
Cinnamara...	...		

LAKHIMPUR DISTRICT.

North Lakhimpur	}	By the Assam Medical Research Society.
Doom Dooma ...	...	
Digboi ...	...	
Jaypur ...	...	
Namsang ...	...	

DARRANG DISTRICT.

Tezpur	}	By the Assam Medical Research Society.
Mangaldai ...	...	
Tangla ...	...	
Lokra and Charduar ...	...	

NAGA HILLS.

Kohima	}	By the Assam Medical Research Society.
Dimapur		

KHASI AND JAINTIA HILLS.

Shillong	}	By the Assam Medical Research Society.
Nongpoh		

SADIYA FRONTIER TRACT.

Pasighat	By the Assam Medical Research Society.
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Besides these the Indian Branch of the Ross Institute in their three centres did an extensive work.

The total number of adults and larvæ caught during 1932 was 70,302 of which identifications were made as follows :—

35,713 were identified at the Pasteur Institute, Shillong.

13,314 were identified at Mangaldai.

9,976 were identified at Cinnamara.

6,691 were identified at Gauhati.

9,032 were identified at Kachugaon.

5,546 were identified at Sylhet.

In 1932, blood examinations of 5,252 cases were done.

In Sylhet town a systematic malaria survey was carried out by the two Sub-Assistant Surgeons on malaria duty under the supervision of the Assistant Director of Public Health, Surma Valley and Hill Division. The result of the survey showed that the town is a fairly healthy area. No infected mosquitoes have yet been detected. In Sylhet town 2,001 children were examined of which 69 cases were found with enlarged spleen. A preliminary malaria survey of the Tahirpur area in the Sunamganj subdivision and also of the area around Uttarpratappur dispensary in the North Sylhet subdivision was undertaken by the Assistant Director of Public Health, Surma Valley and Hill Division. Both

the areas were found highly malarious. A detailed survey of these areas was not undertaken as no funds were likely to be available. In the Tahirpur area 372 cases were found with enlarged spleens out of 947 children examined.

GOALPARA DISTRICT.

Kachugaon.—Malaria survey of Kachugaon was undertaken during the rains of 1931. The findings were published in Records of Malaria Survey, December 1932.

During the year under report the following investigations were also carried on along with anti-malaria measures.

- (1) Curative treatment of actual cases with Quinine and Plasmoquine.
- (2) Curative treatment of actual cases with Atebrin and Plasmoquine.
- (3) Prophylactic treatment of adults with quinine and Plasmoquine.
- (4) Prophylactic treatment of children with quinine and Plasmoquine.
- (5) Antilarval measures in permanent and temporary breeding places with
(a) Malariol (b) Paris Green.

The findings are the same as those of last year, *i.e.*, *A minimus* is the only carrier in this locality and the infectivity rate is 5.67 per cent. on an average for the year. In June the rate was highest being 10.70 per cent. whereas in February, March and April no infected mosquitoes were found.

(1) 370 acute cases were treated with quinine and Plasmoquine. The results of the course of treatment during the progress showed on the 4th day of treatment only 28.4 per cent. cases with parasites but fever subsided in all cases and on the 8th day only 1.6 per cent. showed parasites and no cases showed fever.

The relapse cases amongst these numbered 37 of these many occurred after a long period even of 90 days. It is difficult to say if they were fresh infection. The percentage of relapse is 10 per cent.

(2) With Atebrin supplied by Messrs. Haverro Trading Company for experiment 61 cases were treated without any untoward symptom. 8 cases out of these relapsed giving a percentage of 13.33 per cent. Eight cases showed parasites in their blood after the completion of the course. In the absence of previous experience with the drug a four days' course was preferred to a five days' course. This seems to be equally efficacious and more so for those who cannot tolerate quinine.

(3) On an average 114.6 cases were treated every month with Quinine and Plasmoquine three times a week. Amongst them there were 7.3 attacks of fever giving a percentage of 6.3 per cent. whereas a control group of 85 persons throughout the period of investigation had 10.5 attacks amongst them giving a percentage of 12.3 per cent. This shows that the number of attacks even in a hyperendemic area could be reduced by giving prophylactic doses of quinine and Plasmoquine.

(4) All available children of 6 villages were treated with a prophylactic course of Euquine and Plasmoquine twice a week. The spleen rate was 89.5 per cent. at the commencement of treatment but a course of treatment for 8 months reduced the spleen rate to 47.4 per cent.

(5) Oiling and Paris greening was carried out systematically throughout the year in all permanent and temporary breeding places. In order to determine the effects of anti-larval measures, there were four trial stations at four corners of the area in which a collector used to catch mosquitoes on a particular day every week for a fixed period. The results of these measures were excellent. The total catches in trial stations gradually diminished from 276 in July 1932 to 20 at the end of April 1933.

Gossaingaon.—Curative treatment of actual fever cases and prophylactic treatment of adults and children were carried out in this area. No anti-larval measures were undertaken and no survey was done.

Haltugaon.—Only curative treatment of actual fever cases and prophylactic treatment of Government servants and their families were undertaken in this area. There was no survey and no anti-larval measures were undertaken.

CACHAR DISTRICT.

Haflong.—A Sub-Assistant Surgeon of the Public Health Department was posted to this town for malaria work who worked from August till the end of the year.

Moibong.—A contribution of Rs. 750 was made by the Public Health Department for anti-malarial measures in this area.

Hailakandi.—A Sub-Assistant Surgeon of the Public Health Department was posted for malaria survey in this subdivision. The survey was started late and as a result no infected mosquitoes could be found out.

KAMRUP DISTRICT.

Gauhati.—A trained Sub-Assistant Surgeon of the Public Health Department carried on malaria survey in this town throughout the year. The survey will continue for sometime more until the carrier species has been determined. Quinine was also freely distributed amongst the indigent mass through the agencies of the Public Health Department.

NOWGONG DISTRICT.

Nowgong.—A Sub-Assistant Surgeon of the Public Health Department was posted for malaria work in this town and worked under the supervision of the Malaria Research Officer.

Lumding.—The Chairman, Station Committee, Lumding, was responsible for anti-malarial measures on the Government land adjoining the Railway boundary and Malaria Research Officer inspected the operations from time to time.

SIBSAGAR DISTRICT.

Sibsagar, Golaghat, Jorhat.—Malaria survey and also anti-larval measures were carried out in Jorhat, Golaghat and Sibsagar towns under the supervision of the Assam Medical Research Society during the year. Mosquitoes were found abundant in these towns. Nine thousand eight hundred and fifty three adults and larvæ were caught. Dr. P. Foster, Medical Officer of the Badulipar Tea Estate sent blood of 86 persons for examination. Paris Green and a Blower were supplied by the Public Health Department for trial on Government land at Cinnamara in co-operation with Dr. Manson.

LAKHIMPUR DISTRICT.

North Lakhimpur.—A special Sub-Assistant Surgeon of the Public Health Department was posted to this town for malaria survey on 24th November 1932.

Doom Dooma.—A Sub-Assistant Surgeon of the Public Health Department was posted to this area in October for anti-malaria work. Plasmoquine was supplied by Government for treatment of patients.

Digboi.—Plasmoquine was supplied to Digboi and with this drug the Medical Officer, Burmah Oil Company, undertook treatment of malaria cases.

DARRANG DISTRICT.

Mangaldai.—A special Sub-Assistant Surgeon of the Public Health Department was posted to this area for anti-malaria work in August and worked there till December.

Charduar.—Malariol and a sprayer were supplied by the Public Health Department. The whole area of Charduar was divided into three plots. Each plot having drains and pools of stagnant water was properly sprayed with malariol on three consecutive days one after the other and resprayed once a week thereafter. The regular spraying of oil was suspended temporarily after 31st October as many pools of stagnant water were dried up.

NAGA HILLS DISTRICT.

Kohima.—Larvicides were ordered for this place. When the materials reached Dimapur two big land slips occurred at two places and as there was a great deal of rain, these materials could not be taken to Kohima in time. Hence no anti-malarial measures could be undertaken at this place during the year. In Kohima 428 cases were treated with Plasmoquine in Civil and Military Hospitals.

The experiment with Plasmoquine was made in mass treatment, hospital treatment and prophylaxis. A Maculatus was found to be the carrier species.

Dimapur.—Necessary larvicides were supplied by the Public Health Department and anti-malarial measures continued till the end of the year.

KHASI AND JAINTIA HILLS.

Shillong.—Spraying and oiling operations were continued until the end of November 1932 with larvicides supplied by the Public Health Department. A contribution of Rs. 1,200-7-0 was sanctioned by Government to the Shillong Municipal Board for the construction of a drain at Jail Road in connection with anti-malarial measures.

Nongpoh.—The Public Health Department supplied the Sub-Assistant Surgeon of the Nongpoh Dispensary with 5,000 tablets of Plasmoquine for treatment of malaria cases with this drug.

In Nongpoh Dispensary 925 malaria cases were treated of which 79 with Quino-plasmoquine tablets. One hundred and fourteen out of 135 or 84 per cent. inhabitants of Nongpoh itself suffered from malaria in 1932 and this was confirmed by house to house visits. One hundred specimens of *A. minimus* were dissected of which 4 were found infected. Adult specimens of *A. minimus* were caught throughout the monsoon season and until late December in 1932 and again early in February 1933, 28 blood examinations were done out of which 11 were found positive.

SADIYA FRONTIER TRACT.

Pasighat.—Some Malariol was supplied by the Public Health Department, but spraying and consumption of this oil was very slow owing to heavy and continuous rainfall for some days together.

A. minimus was found to be carrier in the districts of Darrang and Lakhimpur and in Shillong. *A. maculatus* was found to be carrier species in Kohima and in Khasi and Jaintia Hills district.

SALE OF QUININE.

39. The subjoined table shows the quantity of Quinine sold district by district during the year 1932 as compared with the amount sold in 1931:—

Districts.	Treatment parcels sold in—		Difference.	
	1932.	1931.	Increase.	Decrease.
1	2	3	4	5
Cachar	326	417	...	91
Sylhet	1,484	1,455	29	...
Goalpara	431	574	...	143
Kamrup	906	792	114	...
Darrang	349	462	...	113
Nowgong	108	367	...	259
Sibsagar	759	689	70	...
Lakhimpur... ..	276	312	...	36
Khasi and Jaintia Hills...	434	374	60	...
Naga Hills...	108	50	58	...
Lushai Hills	1,186	1,519	...	333
Garohills	49	35	14	...
Sadiya Frontier Tract	65	46	19	...
Manipur State	50	78	...	28
Total	6,531	7,170	364	1,003

During the year under report 6,531 parcels of quinine treatments were sold against 7,170 parcels in the preceding year, showing a decrease of 639 parcels. The decrease in sale is partly due to certain restrictions adopted on account of the reduced budget grant for the purchase of quinine for sale. Owing to an outbreak of malarial fever with unusual virulence the undermentioned quantities of quinine and cinchona were obtained for free distribution to indigent malaria patients in the following seven plains districts:—

						Quinine Sulph. Lbs.	Cinchona. Lbs.
1						2	3
Cachar	...	...	...	...	...	...	31
Sylhet	...	...	...	...	...	44 8 0	69
Goalpara	...	...	...	...	...	20 0 0	10
Kamrup	...	...	...	...	...	8 0 0	62
Nowgong	...	...	...	...	...	21 0 0	66
Sibsagar	...	...	...	...	...	6 0 0	8
Darrang	...	...	...	...	...	30 0 0	18
Total						129 8 0	264

The less sale of quinine in some of the plains districts during the year under report is due to quinine being available for free distribution to indigent patients. As in the previous year the drug was sold at the same price, *viz.*, 4 annas 6 pies per treatment of twenty-four-grain tablets.

CHAPTER IX.

MATERNITY AND CHILD-WELFARE.

40. Maternity and Child-Welfare is now receiving special attention in all district headquarters and in some of the subdivisions. The object is to establish working centres throughout the Province. The Lady Kerr Child-Welfare Centre in Shillong continued to function during the year. A total of 1,248 persons were attended to during the year. This number included anti-natal cases, post-natal cases, etc.

In Sibhsagar Child-Welfare and Maternity work continued to be done. Meetings were held at various centres by responsible ladies. Good work is being done in this direction.

In Lakhimpur the Red Cross Association of Dibrugarh is trying to collect funds for a permanent house for this work.

A Child-Welfare exhibition was organised by the joint efforts of the Cachar Red Cross Association, Silchar Medical Club and Silchar Branch of the All-India Medical Licentiates. Two welfare centres have been formed in the Cachar district.

This question has met with complete apathy in the Kamrup district. Highly qualified Lady Missionary Doctors have not been able to do anything in this direction.

In the Goalpara district the work could not be systematically done owing to the indifference of the ladies.

A total of 37,316 infants died during 1932 giving a rate of 156.58 per 1,000. In other words 102 children died each day of the year. It is not too much to expect that many of these valuable lives could be saved by spread of knowledge regarding maternity and child-welfare. Establishment of maternity and child-welfare centres first in district headquarters and then in subdivisions and rural

areas is a crying need. If the municipal boards and local boards take up the matter earnestly they can immediately do something in the matter without much extra expenditure with the help of the midwives they maintain. It is also possible to enlist the help of voluntary workers. To get the Red Cross Society's help it is necessary to prove that some substantial work has already been done. Financial assistance from the Red Cross Society is available in a matter like this. It should however be borne in mind that the Red Cross Society help those that help themselves.

CHAPTER X.

SCHOOL HYGIENE AND MEDICAL INSPECTION OF SCHOOL CHILDREN.

41. During the year under review the Assistant Director of Public Health, Surma Valley and Hill Division, devoted some attention to the hygienic conditions of schools. During the course of his tours he inspected certain schools and delivered lectures to the pupils and teachers on health subjects. He also noted on the general sanitary conditions of Schools as regards site, ventilation, latrines and urinals seating accommodation and the vaccinal condition of scholars and also on the structural condition of schools. These remarks were transmitted to the Director of Public Instruction for information and necessary action. The Assistant Director of Public Health, Assam Valley Division, did not visit any school during the year. In Kamrup, the Medical Officers in charge of dispensaries carried out periodical inspections of selected Institutions and made recommendations for the improvement of the health of boys and general sanitation of the schools and hostels attached thereto.

The Medical Officers in charge of hostels generally attend to the hygiene and health of students at hostels. Periodical inspection of health of boys in school is also carried out.

Practically no systematic inspection of school children is done in the Province, as there is no staff to do the work. The number of High Schools, Middle English and Primary Schools in the Province is as follows:—

High Schools	...	...	...	...	67
Middle English and Middle Vernacular Schools	...	...	...	...	444
Primary	...	...	...	...	5,891

with 340,795 scholars. To carry out the work properly there must be a staff of at least two Assistant Surgeons and one Lady Doctor (for girls' schools) so that each school may be visited once every year. It is a matter which deserves to be taken up at once as the health of school going children in Assam is by no means ideal.

CHAPTER XI.

HEALTH PROPAGANDA.

42. Owing to financial stringencies no public health propaganda with the aid of magic lantern was carried out in 1932. During the year some leprosy pamphlets in English, Bengali and Assamese received from the Assam Leprosy Committee were distributed through the Director of Public Instruction, Registrar, Co-operative Societies, Municipal and Local Boards and the staff of the Public Health Department. Some leaflets in Assamese and Bengali on Tuberculosis were also distributed.

During the course of his tours the Assistant Director of Public Health, Surma Valley and Hill Division, delivered lectures to the pupils and teachers of certain schools on health subjects. Diseases that take a heavy toll of life in the province are all preventable. The mass is ignorant as to how these can be prevented. It is essentially necessary that propaganda and publicity should be vigorously started throughout the province. It is only by propaganda and publicity that the mass can, in due course, be educated in the laws of health and hygiene and a Public Health conscience evolved.

INDIAN RED CROSS SOCIETY.

43. The full records of the progress of activities of the Red Cross Society will be found in the Honorary Secretary's Report for 1932. There were 6 district branches namely (1) Sylhet, (2) Cachar, (3) Nowgong, (4) Goalpara, (5) Sibsagar, (6) Lakhimpur. Additional branches have since been established at Manipur and Kamrup. Very substantial progress was made with Red Cross activities during the year in the province.

CHAPTER XII.

PUBLIC HEALTH ADMINISTRATION.

44. The financial condition of Government during the year under report was not satisfactory and as a result of which schemes for the expansion of the Department had to be held up.

Budget grants for the Department.

The budget allotments for the years 1931-32, and 1932-33 for the Public Health Department amounted to Rs. 7,27,500 and Rs. 6,29,800 respectively while those for the heads administered by the Director of Public Health amounted to Rs. 5,95,414 and Rs. 5,37,608 respectively. The Public Health Engineering Establishment which was sanctioned by Government from the year 1931-32 had been suspended from the year 1932-33 owing to financial stringency.

The receipts of the departments for the years 1931-32 and 1932-33 amounted to Rs. 84,081 and Rs. 69,402 respectively. The receipts against the budget of the Director of Public Health during these years amounted to Rs. 72,651 and Rs. 69,427 respectively. It is estimated that the receipts during the year 1933-34 will amount to Rs. 80,000 against the budget of the Director of Public Health to Rs. 70,000.

The strength of the Public Health Department during the year was as follows :—

1. Director of Public Health ...	...	...	1
2. Assistant Directors of Public Health ...	...	...	2
3. Urban Health Officers ...	...	...	11 (Two posts vacant).
4. Assistant Surgeons ...	...	...	7 (One permanent and 6 temporary).
5. Sub-Assistant Surgeons ...	...	...	101 (One permanent and 100 temporary).
6. Vaccination Inspecting staff ...	...	...	39 (Twenty-nine permanent and 10 temporary).
7. Clerks ...	...	...	25 (Fifteen permanent and 10 temporary).
8. Compounders ...	...	...	6 (Temporary).
9. Literate packers ...	...	...	2
10. Loaders ...	...	...	2
11. Disinfectant carriers ...	...	...	30
12. Sample-taker ...	...	...	1
13. Laboratory Assistants and Media Makers ...	...	...	11
14. Vaccinators appointed by Government in Hill Districts			37
By Local Boards ...	...	...	352
By Municipalities ...	...	...	25
15. Servants ...	...	...	50

The Shillong Municipal Board appoints a fully qualified Health Officer and this officer's pay is partly met by contribution from Government. It is high time that other large municipalities of the province should also appoint fully qualified Health Officers, *viz.*, medical graduates with diploma in Public Health. In consideration of the work already in hand and the other works that should be tackled without delay, it is no longer advisable to put off the reorganisation of the Public Health Department.

CHAPTER XIII.

VACCINATION.

This chapter and all statistical tables connected therewith refer to the period April 1st 1932 to March 31st 1933.

45. Vaccination was carried on as usual throughout the province among a total population of 9,247,857.

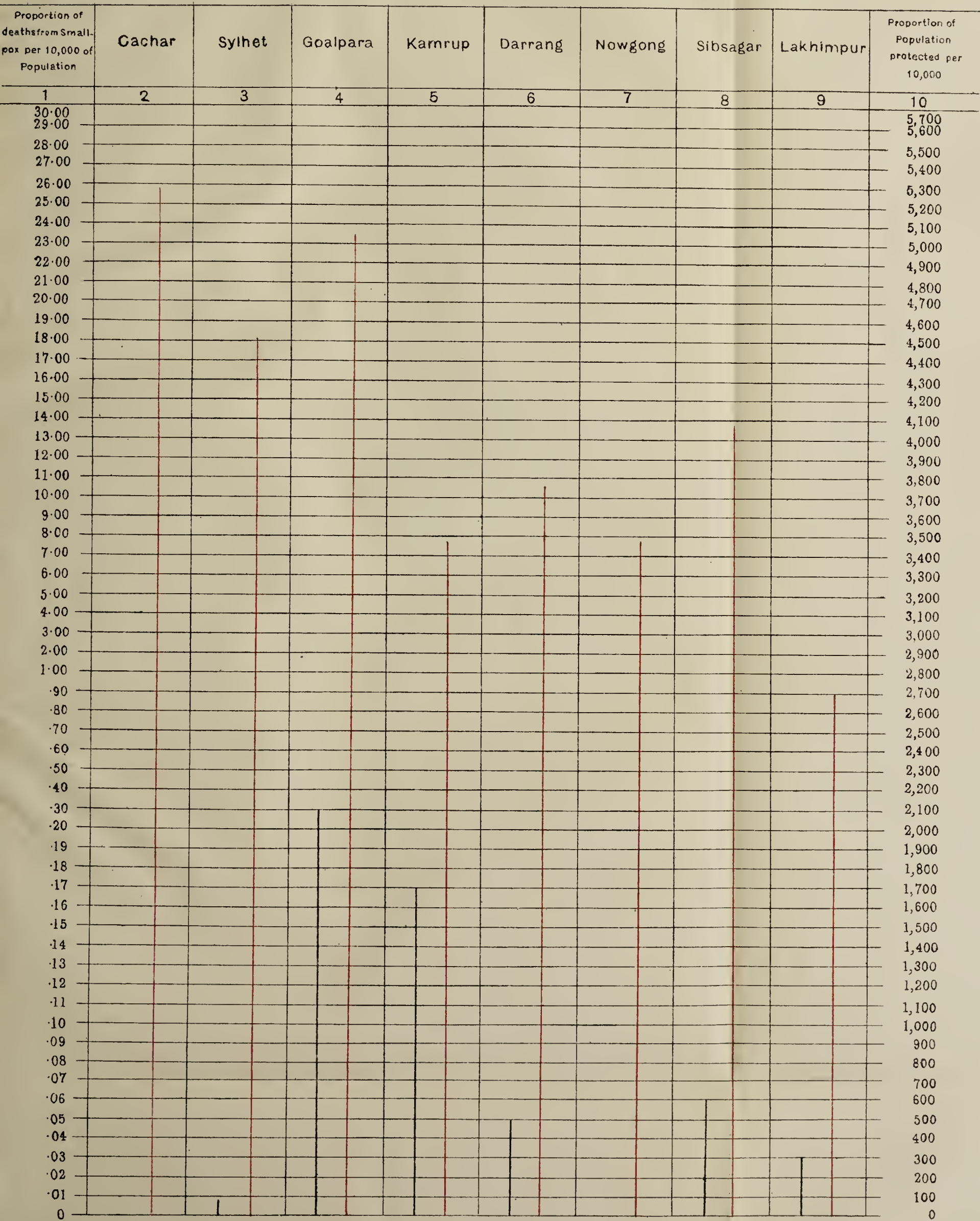
Introductory.

46. Among the general population, vaccination was performed by 429 departmental vaccinators and among the labour force of the Tea Estates by the garden medical officers;

Vaccination agencies.

Railway employees were vaccinated by the Railway medical officers and in Jails vaccination was performed by Sub-Assistant Surgeons in medical charge. The total number of vaccinators employed during the year was 429, as compared with

The following diagram illustrates the death rates from Small-pox in each District side by side with the proportion of the Population protected against the disease by Vaccination during the seven years 1925-26 to 1931-32



NOTE - Black lines indicate death rate from Small-pox
Red lines indicate the proportion protected by Vaccination

440 in the preceding year. Some of the local Boards reduced the number of their vaccinators owing to financial stringencies. The average number of persons vaccinated by each vaccinator was 1,489 during the year under report, as compared with 1,277* in the preceding year.

47. The total number of operations performed during the year by all agencies was 685,829 of which 369,975 were primary operations and 315,854 were revaccinations as compared with 605,046 in the preceding year of which 341,463 were primary and 263,583 were re-vaccinations. This shows an increase of 80,783 operations in total operations and an increase of 28,512 in primary operations and 52,271 in re-vaccinations. Variations in the district returns are criticised in paragraph 55.

Total number of operations performed by the different agencies during the year under report and in the previous year is shown below:—

				1932-33.	1931-32.
Number of operations by Departmental vaccinators				638,606	562,090
Ditto	by the staff of dispensaries	...	...	6,815	6,015
Ditto	by Tea garden agencies	...	...	31,224	29,798
Ditto	by Jail, Asylum, Police and Emigration Hospital agencies.			5,970	5,707
Ditto	by Railway agencies	...	...	3,214	1,436

48. The number of operations performed during the year was 638,606 as compared with 562,090 in the preceding year. The increase in the number of operations is reported to be due to longer period for which the vaccinators were employed. The Tea garden agencies, Jail, Police, Asylum and Emigration hospital agencies and the Railway agencies also performed larger number of operations than in the previous year.

49. The ratios of deaths from small-pox during the year 1932-33 was .06 per mille of population as compared with .07 in the preceding year. As in the two previous years the death-rate reported from small-pox was highest in the district of Goalpara (.30) Small-pox has been persisting in this district for some years. some thanas in this district were declared as small-pox infected areas for the purpose of making vaccination and re-vaccination compulsory and a large number of persons were vaccinated and re-vaccinated. The next highest rate, viz., .17 was reported from the Kamrup district. It is to be regretted that the Gauhati Local Board in this district reduced the number of vaccinators in spite of the protest by the district Civil Surgeon. The attached chart illustrates the death-rates from small-pox in each district side by side with the proportion of population protected against the disease by vaccination during the 7 years from the 1926-27 to 1932-33.

50. Vaccination in rural areas in Assam is not compulsory but every encouragement is given to the people to get vaccinated. Instead of taking advantage of the arrangements for free vaccination, people very often refuse to accept vaccination. To overcome this reluctance, regulations under the Epidemic Diseases Act 1897 (Act III of 1897), are now available to declare an area as infected area. When parts of the province have been visited by and other parts threatened with an outbreak of small-pox and that people cannot be induced to accept vaccination, the above regulations are brought into operations to prevent an outbreak or spread of the disease. During the year under report the Mankachar, Dhubri, Bijoi and North-Salmara thanas in the Goalpara district and 16 villages under Kamalpur, Rangia, Hajo, Nalbari, Barpetta, Patacharkuchi and Sarbhog thanas in the Kamrup district were declared as small-pox infected areas.

Foot note.—* In the last year's report average number of persons vaccinated by each vaccinator was shown as 1552 instead of 1,277 by mistake.

51. A total of 6,815 vaccination operations were performed by the dispensary staff of which 2,139 were primary and 4,676 re-vaccinations as compared with 6,015 operations in 1931-32 with 2,407 primary and 3,608 re-vaccinations.

52. The percentage of success of the vaccination operations performed by all establishment combined was 94·84 for primary vaccinations and 62·41 for re-vaccination as compared with 92·97 and 58·27 respectively in 1931-32. The successful percentage in primary vaccinations and re-vaccinations in the case of vaccinators were 94·93 and 63·08 respectively as against 93·00 and 58·84 respectively in 1931-32, in the case of dispensary staff 83·58 and 48·05 respectively against 90·28 and 60·40 respectively in 1931-32 and in the case of the Tea garden agencies 94·95 and 70·48 against 93·26 and 57·48 respectively in 1931-32. No complaints as regards the potency of the lymph were received during the year under report.

53. All vaccinations were performed, as in previous years with glycerinated calf lymph made in the Provincial Vaccine Depot at Shillong.

54. The following table shows the increase and decrease in vaccination operations in individual districts, as compared with those of the preceding year.

					1932-33	1931-32	Increase	Decrease
					Total	Total		
Cachar	...	...	...	...	40,572	37,082	3,490	...
Sylhet	...	...	...	...	165,495	157,336	8,159	...
Khasi and Jaintia Hills			...	...	22,937	23,860	...	923
Naga Hills		...	...	...	8,880	8,129	751	...
Lushai Hills		...	...	...	10,809	7,641	3,168	...
Goalpara	...	...	...	...	169,700	100,379	69,321	...
Kamrup	...	...	...	...	56,754	61,267	...	4,513
Darrang	...	...	...	...	43,337	39,276	4,061	...
Nowgong	...	...	...	..	33,400	32,835	565	...
Sibsagar	...	...	...	...	52,052	58,052	...	6,000
Lakhimpur	...	...	...	...	33,698	28,735	4,963	...
Garro Hills	...	...	...	...	20,010	23,409	...	3,399
Manipur State			...	...	22,646	22,149	497	...
Sadiya Frontier Tract			...	...	4,999	4,562	437	..
Balipara Frontier Tract			...	...	540	334	206	...
Total				...	685,829	605,046	80,783	...

The increase in the Goalpara district is the highest (69,321). Normally a vaccinator is expected to perform a minimum of 250 vaccination operations in a month in the vaccination season. In the Goalpara district it is much in excess of this. The mortality from small-pox in the Kamrup district is high. The fall in the number of vaccination operations as a result of entertainment of smaller number of vaccinators was most undesirable. No vaccination operations were performed in the dispensaries in this district and also in Darrang, Nowgong

and Cachar. In the Sibsagar district 46 vaccinators were entertained against 47 in the previous year and the vaccination operations were less by 6,000. The average number of vaccination operations performed by a vaccinator in each month of the vaccination season is about 150 which is very small.

COMPOSITION AND STRENGTH OF THE INSPECTING STAFF.

55. The subordinate inspecting staff was same as in the previous years and consisted of 9 Inspectors, 20 permanent and 10 temporary Sub-Inspectors of Vaccination and 2 Sub-Inspectors were entertained by the Manipur State.

VERIFICATION BY THE INSPECTING STAFF.

56. Civil Surgeons, Assistant Directors of Public Health and Assistant Surgeons inspected 6.66 per cent. of the primary and 3.79 of the re-vaccinations performed during the year, as compared with 5.12 and 3.34 respectively in the previous year. The subordinate Inspecting Staff inspected 47.03 per cent. of the primary and 30.51 of the re-vaccinations during the year, as compared with 42.51 and 30.21 respectively in 1931-32.

The percentage of primary operations inspected in the districts of Sibsagar (28.13) and Garo Hills (19.62) were small.

VACCINATION IN COMPULSORY AREAS.

57. In towns where vaccination is compulsory 6,006 infants were born, of these 737 died. Five thousand two hundred sixty-nine infants were therefore available for vaccination during the year, out of this 2,608 or 49.50 per cent. were successfully vaccinated, as compared with 46.50 per cent. of the previous year. Ninety-nine per cent. of the available infants were vaccinated in the Gauhati town, in Nowgong 83 per cent. in Mangaldai 82 per cent. in Sylhet 79 per cent. in Habiganj 64 per cent. in Shillong 58 per cent. in Dhubri 56 per cent. in Dibrugarh 43 per cent. in Karimganj 42 per cent. in Gauripur 40 per cent. in Barpeta 36 per cent. in Maulvibazar 33 per cent. in Tezpur 29 per cent. in Sunamganj 25 per cent. in Tinsukia 22 per cent. in Doom-Dooma 21 per cent. in Goalpara and Jorhat 14 per cent. in Nazira 11 per cent. in Sibsagar 10 per cent. In the Hailakandi town out of 63 available infants none was successfully vaccinated. The Civil Surgeon has taken up the matter.

In rural compulsory areas under village authorities in Sylhet, Nowgong and Sibsagar districts 3,682, 3,026 and 930 operations were performed as compared with 4,225, 3,020 and 1,110 respectively in the previous year.

VACCINE DEPÔT.

58. The total number of capillary tubes loaded during the year was 992,112, as compared with 869,559 in 1931-32. The number of calves purchased and inoculated during the year under report was 624 excluding 10 of last year and lymph was taken from 551 calves. Eighty-three calves were rejected 37 on account of failure of operation, 41 due to illness and 5 on account of ulceration and unsatisfactory vesicles, as compared with 45, 35 and 8 in the preceding year. The average number of tubes per calf was 1,801 as compared with 1,631 in 1931-32. The total cost of working the Vaccine Dépôt was Rs. 16,637-9-0 of which Rs. 5,159 was on Establishment Rs. 3,390 on purchase of calves, Rs. 540 on feed of calves, Rs. 4,557 on purchase of capillary tubes and Rs. 2,991-9-0 on miscellaneous contingencies, as compared with Rs. 17,867 in 1931-32.

The lymph was as usual supplied free to Civil Surgeons, Inspectors and Sub-Inspectors of Vaccination, Local Boards and Municipal Boards. Tea gardens, Railways, Manipur State and Medical Officers of Military Units were supplied with lymph at the rate of one anna per tube.

Lieut.-Colonel T. D. Murison, I.M.S., held charge of the Dépôt, during the year. The subordinate charge of the dépôt was held by Sub-Assistant Surgeon Dr. Monmohan Sarkar.

COST OF THE DEPARTMENT.

59. Including the charges of the Vaccine Dépôt, the total expenditure on vaccination in Assam during the year under report was Rs. 1,06,877-5-0, as compared with Rs. 1,12,267-8-0, the decrease of Rs. 5,390-3-0 was due mainly to establishment and travelling allowance.

Of the total expenditure of Rs. 1,06,877-5-0 during the year, Rs. 51,552-1-2 was paid from the provincial revenues, Rs. 45,099-1-9 from Local Funds, Rs. 4,308-0-6 from Municipal Funds, Rs. 1,663-7-0 from Imperial Funds and Rs. 4,254-10-7 was contributed by the Manipur State. The average cost of each successful vaccination during the year was annas three and pies eight, as compared with annas four and pies five only in 1931-32.

60. Primary vaccinations and revaccinations performed by Tea Garden Medical officers numbered 24,707 and 6,517 by Medical officers in charge of Jail Hospitals, Mental Hospitals, Police Hospitals, and Infectious diseases hospitals 474 and 5,496, by Railway Medical officers 697 and 2,517. The successful percentages were 94.95 and 70.48, 84.06 and 43.73, 86.55 and 27.47 and 94.84 and 62.41 respectively.

CHAPTER XIV.

OTHER PUBLIC HEALTH SERVICES.

61. The principal industry in the province is the Tea Industry. The sanitary conditions of tea gardens are generally satisfactory. Special regulations under the Emigration Act exist in regard to the supervision of the sanitary conditions of the Tea Estates. No part of any town in the Province has yet been set apart as industrial areas. Towns are rendered healthier if the various industries are allowed to grow outside the towns. Various Mills are being put up at Gauhati and Tinsukia and this question will soon arise in these areas. Attention of the authorities of the Gauhati town and Tinsukia Small Town is drawn to this.

62. No remarks. It was at the close of the year under review that the Assistant Director of Public Health, Assam Valley Division, the Assistant Director of Public Health, Surma Valley and Hill Division, the Civil Surgeon, Lakhimpur and the Civil Surgeon, Naga Hills, were appointed as the *ex-officio* Inspectors of Mines under Section 4 of the Indian Mines Act, 1923 (IV of 1923).

PUBLIC ANALYST.

(Food adulteration.)

63. In the year under review the Assam Pure Food Act (Assam Act IV of 1932), was passed and the Assistant Surgeon in-charge of the Public Health Laboratory was appointed Public Analyst.

The appended table shows the work done in the Public Health Laboratory in 1932 as compared with that of the preceding year :—

	1932.		1931.	
	Number examined.	Number found adulterated.	Number examined.	Number found adulterated.
1	2	3	4	5
Chemical analysis of water	105	24	89	...
Ditto milk	263	98	206	59
Ditto ghee	118	56	151	79
Ditto butter ... ..	...	...	7	3
Ditto mustard oil	117	57	116	69
Ditto tea and tea dust ... ..	...	...	7	...
Ditto other food stuffs	25	7	23	...
MISCELLANEOUS CHEMICAL ANALYSIS.				
Bacteriological examination of water	555	67	349	...
Ditto of vaccine lymph	251	...	248	...
Miscellaneous microscopical examination of blood films, etc. ... ..	...	...	4	...
Antiseptics and larvicides ... ..	...	...	...	...
Total	1,434	309	1,205	210

The number of samples analysed in the Laboratory during the year was 1,434 against 1,205 in 1931.

The increase in the number of samples in 1932 was mainly due to the increase in the number of samples of water. Bacteriological and Chemical examinations of the filtered waters of all the water works and of the jails were carried out periodically throughout the whole year. Samples are inoculated on the spot as soon as collected, and carried up to the Laboratory for analysis. All samples were found satisfactory except those of Haflong which showed animal contamination throughout the whole year. Imphal waters were bacteriologically examined once and they all showed contamination. Examination for the presence of *B. coli*, *B. Dysenterica*, *B. typhosus* and its group were carried out on these waters, but the results were negative.

In Shillong waters, contaminations were mostly noticed during the rains. Samples from all the hydrants within the Gauhati Municipality were examined twice during the year and out of 95 samples examined four were found contaminated. A sample of milk was received from Siem of Myllem State which when boiled coiled like intestines. This sample, on examination, was found to contain some kinds of bacteria which are responsible for the unhealthy condition of the mammary glands of the animal. It was found to be a case of "Ropy" or "Slimy milk".

Two samples of rice were analysed for their phosphatic contents over and above the routine examinations and were found within the standard. The Laboratory has been preparing hypochlorite solution of 1.28 per cent. available chlorine for disinfecting purposes and .4 per cent. neutral eusol for washing and dressing purposes.

As usual the Laboratory worked as a Provincial Dépôt for the supply of Urea-stibamine and spare parts of syringes to *kala azar* dispensaries. A series of experiments were carried out to find out the defects in some doubtful urea-stibamine which produced grave symptoms in patients after injection.

The following officers held charge of the Laboratory for the period noted against each during the year under report :—

1. Dr. Saratsasi Kundu, from January to 30th April 1932.
2. Dr. Nalinendra Kishore Ghosh, from 1st May to 8th July 1932.
3. Dr. Surendra Chandra Dutta, from 9th July to 31st December 1932.

Port Health Administration.—Nil.

Sanitary works,

64. (*Civil*).—This is dealt with in Chapter VI under heading "Urban sanitation".

Public Health Board,

65. There was no meeting of the Public Health Board during the year. The Health Board (Epidemics) functioned as in the previous year.

CHAPTER XV.

GENERAL REMARKS.

66. This work is entrusted to the Assam Medical Research Society formed in 1931. The Society is in receipt of an annual contribution from the Government of Assam, and the Director of Public Health, Assam, is an *ex-officio* member of the governing body. The activities of the Society have been confined to Malaria, Cholera, Dysentery, Anæmias of pregnancy and Pneumonia. The survey of certain malarious areas have been undertaken. Experiment with cholera and dysentery bacteriophage is being made in the Nowgong district and in the Habiganj subdivision.

Leper Asylums and Colonies.

67. The subjoined statement shows the details of patients treated in the four existing Leper Institutions in the province :—

—	Remaining from previous year.	Admissions during the year.	Total.	Discharged cured or relieved.	Discharged otherwise.	Died.	Remaining at the end of the year.
1	2	3	4	5	6	7	8
Sylhet Leper asylum ...	69	25	94	...	14	7	73
Kohima Leper Hospital ...	23	8	31	...	...	2	29
Leper Ward, Dhubri ...	10	5	15	2	1	...	12
Leper Colony, Tura ...	40	32	72	2	16	2	52

Treatment is available in out patient clinics at all sadr and subdivisional headquarters hospitals and at many of the more important outlying dispensaries. Thirty-nine Public Health Dispensaries have up-to-date been equipped for the treatment of leprosy.

68. No remarks.

Famine.

69. During the year under review the Assam Pure Food Act (Act IV of 1932), was passed to prevent the adulteration of food and the sale of adulterated and unwholesome food. This Act extends to the whole of Assam excluding the territories declared to be backward tracts.

Public Health Acts.

70. Some ambiguity exists as to what exactly is wanted in this paragraph. No essays on Public Health were invited during the year. The following experiments were in progress during 1932.

Public Health Essays.

Bacteriophage.—Two lakhs twenty thousand six hundred ninety-five doses of bacteriophage were issued from the Pasteur Institute and Medical Research Institute, Shillong. The demand for bacteriophage in the treatment of bacillary dysentery in tea gardens is steadily increasing.

The field experiment in the prevention of cholera by the distribution of bacteriophage to villages in Nowgong which began in December 1929 continued throughout the year. The total deaths from cholera in 1932 in Nowgong were 27. The Habiganj subdivision of the Sylhet district was taken in 1932 for distribution of bacteriophage in the similar manner and cholera vaccination was suspended in this area since the inception of the experiment. The Habiganj subdivision is having smaller number of deaths as compared with that in previous years. It however remains to be seen if the decline in mortality in these are as is due to the effects of 'phage distribution or to the general low level at which cholera ran in 1932 in various areas in the province. If bacteriophage is successful in preventing cholera the control of cholera epidemics in rural areas will be much more easy and much less expensive than at present. The conclusive results of the experiments are anxiously awaited.

Neo-stibosan.—"Neo-stibosan" manufactured by Messrs. Beyer Meister Lucius of Germany has been tried in the intensive treatment of *kala azar*. The reports of the Civil Surgeons as to the effect and popularity of the drug have not yet been received.

Plasmoquine.—Plasmoquine and Atebrin are being tried in the treatment of malaria and also for prophylactic purpose both by this Department and also by the Assam Medical Research Society. The results of the experiment so far are satisfactory.

Very good results are being obtained by treatment of Yaws patients with Neo-salverson in the Kamrup district.

71. Lieut.-Colonel T. D. Murison, I.M.S., held charge of the Department throughout the year. During January he inspected *kala azar* operations and vaccination work in the districts of Kamrup, Nowgong, Sibsagar and Lakhimpur. In February he inspected *kala azar* operations and vaccination work in the districts of Kamrup, Darrang and in the North Lakhimpur subdivision and also inspected the alignment of the Tangla-Belsiri-Rangapara extension of the Eastern Bengal Railway with the members of the water ways Committee of which he was the Chairman. In July he made an inspection of Government steamer "Sunamukhi" at Gauhati and also inspected the Municipalities of Gauhati, Goalpara and Dhubri. In November and December he inspected certain municipalities in both the Valleys and also *kala azar* operations and vaccination work in the district of Goalpara, Kamrup and Nowgong.

Personal proceedings and office.

I held the post of Assistant Director of Public Health, Assam Valley Division and Dr. S. H. Paul, held the post of Assistant Director of Public Health, Surma Valley and Hill Division, throughout the year. The details of work performed month by month during the year 1932 are as follows :—

January 1932.—I visited Chutiapara *kala azar* dispensary and enquired about cholera epidemic there. I also visited Kharupatia *kala azar* dispensary, Mangaldai and Kalaigaon Local Board dispensaries, and also the Tangla *kala azar* and Bengbari *kala azar* dispensaries with the Hon'ble Minister of Local Self-Government. Examined 132 children of Kalaigaon and Tangla for spleen and found 107 with spleens of various sizes giving an index of 81.06 per cent. Also inspected 86 vaccination at Palashbari.

February 1932.—Inspected the work of Anti-malaria gang at Kachugaon. Inspected the anti-malaria work at Lumding with Dr. Weldon, The Chief Medical Officer of Assam-Bengal Railway.

March 1932.—Visited Kachugaon and Gossaingaon with a view to decide the area to be included in the anti-malaria campaign. Inspected Basugaon *kala azar* dispensary and visited Sidli area in connection with the proposal to initiate anti-malaria operation at Sidli.

April 1932.—I went up to Shillong and consulted with the Director of Public Health, Assam, regarding Plasmoquine treatment at Kachugaon and Gossaingaon. Then I organised and supervised cholera epidemics in Kamrup district. I visited the thanas of Kamalpur, Hajo, Nalbari, Patacharkuchi and Barpeta and supervised the work of the 14 doctors in these areas.

May 1932.—Visited cholera infected areas of Gauhati with the Health Officer. Went to Kachugaon and started the Laboratory work there and also the treatment with Quinine and Plasmoquine.

June 1932.—Inspected the work of Kachugaon and started prophylactic treatment of the officials, menials and their families. Surveyed Haltugaon to ascertain the extent of the prevalence of malaria there.

July 1932.—Visited Kachugaon and started the anti-larval measures. Visited Gossaingaon.

August 1932.—Inspected the work at Kachugaon.

September 1932.—I went to Haltugaon and trained the Sub-Assistant Surgeons to blood work and started the curative and prophylactic treatment with Quinine and Plasmoquine in the area. I visited Kachugaon and Gossaingaon again and inspected the work of the doctor there and also that of the anti-malaria gang.

October 1932.—Visited the small-pox infected villages of Nahira and inspected the work of the vaccination staff of Kamrup district.

Inspected the anti-malaria work of Kachugaon and also visited Pathakata village where cases of Epidemic Dropsy had occurred. Saw the cases and investigated into the dietetic conditions as to the probable cause.

Visited anti-malaria work of Gossaingaon and Haltugaon areas.

November 1932.—Investigated the Typhoid Epidemic of the Gauhati town.

Inspected the Kachugaon and Gossaingaon anti-malaria works. Inspected the mosquito breeding areas of the Gauhati town with Col. Sinton.

December 1932.—Took round Col. Sinton, to show anti-malaria works of Kachugaon and discussed with him the various details.

Inspected the anti-malaria works of Haltugaon.

Dr. S. H. Paul inspected vaccination operations in 37 villages of Sylhet district in January 1932 and also 7 local board and *kala azar* dispensaries, the sanitation of 2 Middle English Schools and one High School and delivered short addresses there on "Preventable diseases".

He visited the *mela* site at Chandbhanga in Habiganj subdivision and arranged for the sanitary measures to be taken during the *mela*.

February 1932.—He inspected *kala azar* work of 5 local board dispensaries and one *kala azar* dispensary in Sylhet and Cachar districts. Inspected vaccinations in 30 villages of Sylhet and Cachar districts. Met various influential gentlemen of Sylhet for the purpose of organising a district Red Cross Society. At the request of the Chairman, Karimganj Municipality, he inspected the Shambhusagar tank and gave necessary advice.

Took a spleen census of children between the ages of 2 and 10 years. Scrutinised the work of Sub-Inspector of Vaccination, Karimganj.

March 1932.—Inspected vaccinations in 23 villages and 1 local board dispensary. Took a spleen census of children. Scrutinised the work of Inspector of Vaccination, Cachar and Sub-Inspector of Vaccination, Hailakandi.

Went to Bhuban Hill at the Shivaratri *mela* site and with the Sub-Assistant Surgeon, Epidemic unit and disinfectant carriers organised sanitary arrangements there.

April 1932.—Went to Dibrugarh and conducted oral and practical examination in Hygiene and vaccination of the Assam Medical Examination Board held at the Berry-White Medical School.

May 1932.—At the request of the Chairman, Sylhet Municipality, conferred with him regarding sanitary condition of Municipal area.

Met various influential people about the question of starting a District Red Cross Society for Sylhet and arranged for a meeting.

June 1932.—Inspected *kala azar* work of 5 local board and 4 *kala azar* dispensaries. Inspected vaccinations. Inspected the sanitary condition of Sunamganj Municipality, addressed the primary school boys and others assembled there on "Personal Hygiene". Visited the Chhatak bazar and the attention of the Chairman, Local Board, Sunamganj was invited to the most insanitary condition of the public and private latrines in that bazar area.

July 1932.—Inspected 4 local board and 3 *kala azar* dispensaries also inspected one *kala azar* sub-centre.

Inspected Maulvibazar and Habiganj Municipalities. Inspected 1 Middle English and 1 High Schools and delivered short addresses in them on the "Laws of Health". Went round various people trying to induce them to join the District Red Cross Society.

Gave training to Epidemic Unit Sub-Assistant Surgeons and disinfectant carriers of Habiganj Unit according to the syllabus prepared by the Civil Surgeon, Sylhet. Supervised and checked the work done by the Epidemic Unit in the Distribution of Bacteriophage. Checked the work of Urban Health Officer, Habiganj Municipality.

August 1932.—Went to Sibsagar and organised and supervised a serious epidemic of cholera in that subdivision.

September 1932.—Went to Uttarprotappur and accompanied by the Sub-Assistant Surgeon there visited adjoining villages and went round house to house to take spleen census of children between the ages of 2 and 10 years. Children were examined for enlarged spleen. Inspected the *kala azar* dispensary of Uttarprotappur. At the request of the Principal, Murari Chand College, visited Murarichand College Hostel premises to find out the breeding places of anopheline mosquitoes. Started training of Sub-Assistant Surgeons in Malariology. Continued out-door work in the morning and lecture and laboratory work in the after-noon.

October 1932.—Went to Dibrugarh and presided at the written examination of the Assam Medical Examination Board held at the Berry-White Medical School. Also conducted the oral and practical examination in Hygiene and vaccination.

Started systematic Malaria survey of Sylhet Municipal area mahalla by mahalla.

November 1932.—Supervised Malaria Survey of Sylhet town. Went round with the Director of Public Health in his inspection of field work in connection with Malaria survey of the Sylhet town and caught many anopheline mosquitoes and a few anopheline larvæ were also found. Many blood smears were taken to be examined at the Malaria Laboratory at Sylhet for Malaria parasite. Also visited the other villages of Tahirpur area for mosquito survey. Visited some villages in Sunamganj subdivision and found many children unprotected against small-pox. Villagers are very refractory and unwilling to vaccinate their children. So paid house to house visit and induced the villagers to have their unprotected children vaccinated. Many children were vaccinated in his presence.

Inspected *kala azar* work of 3 *kala azar* and 1 local board dispensaries. Took a spleen census of 343 children.

December 1932.—Inspected 2,510 vaccination operations in Sylhet and Cachar districts. Inspected *kala azar* work of 8 local board and 1 *kala azar* dispensaries in Sylhet and Cachar districts. Inspected 3 Municipalities. Inspected Malaria survey work done at Hailakandi. Inspected the sanitary condition of 3 Middle English and 1 Primary Schools and delivered addresses in them on the "Laws of Health".

Checked the work of Inspector of Vaccination, Cachar and Sub-Inspector of Vaccination, Hailakandi. Took a spleen census of 187 children. Supervised Malaria survey of Sylhet town.

72. The report would be incomplete if I do not record my appreciation of the the excellent work done by my entire office staff. My Office. special thanks are due to my Personal Assistant Babu Chandra Nath Halder and my Head clerk Babu Iswar Chandra Das. They have both been indefatigable in the performance of their duties and have proved themselves most reliable, clever and competent subordinates.

P. GUPTA, M.B., D.P.H.,

Offg. Director of Public Health, Assam.

TABLE 1. - VITAL STATISTICS, 1925, BY SEX AND AGE.

Males						Females					
Age	White	Colored	Total	Rate	Per 1,000	Age	White	Colored	Total	Rate	Per 1,000
Under 5	1,234	567	1,801	12.3	12.3	Under 5	1,567	789	2,356	15.6	15.6
5-9	1,123	543	1,666	11.2	11.2	5-9	1,456	765	2,221	14.5	14.5
10-14	1,012	498	1,510	10.1	10.1	10-14	1,345	712	2,057	13.4	13.4
15-19	901	456	1,357	9.0	9.0	15-19	1,234	678	1,912	12.3	12.3
20-24	890	445	1,335	8.9	8.9	20-24	1,123	667	1,790	11.2	11.2
25-29	879	434	1,313	8.8	8.8	25-29	1,012	656	1,668	10.1	10.1
30-34	868	423	1,291	8.7	8.7	30-34	901	645	1,546	9.0	9.0
35-39	857	412	1,269	8.6	8.6	35-39	890	634	1,524	8.9	8.9
40-44	846	401	1,247	8.5	8.5	40-44	879	623	1,502	8.8	8.8
45-49	835	390	1,225	8.4	8.4	45-49	868	612	1,480	8.7	8.7
50-54	824	379	1,203	8.3	8.3	50-54	857	601	1,458	8.6	8.6
55-59	813	368	1,181	8.2	8.2	55-59	846	590	1,436	8.5	8.5
60-64	802	357	1,159	8.1	8.1	60-64	835	579	1,414	8.4	8.4
65-69	791	346	1,137	8.0	8.0	65-69	824	568	1,392	8.3	8.3
70-74	780	335	1,115	7.9	7.9	70-74	813	557	1,370	8.2	8.2
75-79	769	324	1,093	7.8	7.8	75-79	802	546	1,348	8.1	8.1
80-84	758	313	1,071	7.7	7.7	80-84	791	535	1,326	8.0	8.0
85-89	747	302	1,049	7.6	7.6	85-89	780	524	1,304	7.9	7.9
90-94	736	291	1,027	7.5	7.5	90-94	769	513	1,282	7.8	7.8
95-99	725	280	1,005	7.4	7.4	95-99	758	502	1,260	7.7	7.7
Total	10,000	5,000	15,000	100.0	100.0	Total	10,000	5,000	15,000	100.0	100.0

STATEMENTS.

VITAL STATISTICS, 1925, BY SEX AND AGE.

Males						Females					
Age	White	Colored	Total	Rate	Per 1,000	Age	White	Colored	Total	Rate	Per 1,000
Under 5	1,234	567	1,801	12.3	12.3	Under 5	1,567	789	2,356	15.6	15.6
5-9	1,123	543	1,666	11.2	11.2	5-9	1,456	765	2,221	14.5	14.5
10-14	1,012	498	1,510	10.1	10.1	10-14	1,345	712	2,057	13.4	13.4
15-19	901	456	1,357	9.0	9.0	15-19	1,234	678	1,912	12.3	12.3
20-24	890	445	1,335	8.9	8.9	20-24	1,123	667	1,790	11.2	11.2
25-29	879	434	1,313	8.8	8.8	25-29	1,012	656	1,668	10.1	10.1
30-34	868	423	1,291	8.7	8.7	30-34	901	645	1,546	9.0	9.0
35-39	857	412	1,269	8.6	8.6	35-39	890	634	1,524	8.9	8.9
40-44	846	401	1,247	8.5	8.5	40-44	879	623	1,502	8.8	8.8
45-49	835	390	1,225	8.4	8.4	45-49	868	612	1,480	8.7	8.7
50-54	824	379	1,203	8.3	8.3	50-54	857	601	1,458	8.6	8.6
55-59	813	368	1,181	8.2	8.2	55-59	846	590	1,436	8.5	8.5
60-64	802	357	1,159	8.1	8.1	60-64	835	579	1,414	8.4	8.4
65-69	791	346	1,137	8.0	8.0	65-69	824	568	1,392	8.3	8.3
70-74	780	335	1,115	7.9	7.9	70-74	813	557	1,370	8.2	8.2
75-79	769	324	1,093	7.8	7.8	75-79	802	546	1,348	8.1	8.1
80-84	758	313	1,071	7.7	7.7	80-84	791	535	1,326	8.0	8.0
85-89	747	302	1,049	7.6	7.6	85-89	780	524	1,304	7.9	7.9
90-94	736	291	1,027	7.5	7.5	90-94	769	513	1,282	7.8	7.8
95-99	725	280	1,005	7.4	7.4	95-99	758	502	1,260	7.7	7.7
Total	10,000	5,000	15,000	100.0	100.0	Total	10,000	5,000	15,000	100.0	100.0

IMPERIAL STATEMENT No. I.—*Statement showing the births*

No.	Districts.	Population according to the Census of 1931.			Number of births registered.		
		Male.	Female.	Total.	Male.	Female.	Total.
1	2	3	4	5	6	7	8
	SURMA VALLEY.						
1	Cachar	284,738	254,073	538,811	9,031	8,683	17,714
2	Sylhet	1,407,645	1,316,697	2,724,342	51,027	47,763	98,790
	Total	1,692,383	1,570,770	3,263,153	60,058	56,446	116,504
	ASSAM VALLEY.						
3	Goalpara	470,273	412,475	882,748	13,816	12,918	26,734
4	Kamrup	513,345	463,401	976,746	10,991	10,303	21,294
5	Darrang	317,103	267,714	584,817	3,000	7,578	15,578
6	Nowgong	298,585	263,996	562,581	6,391	5,904	12,295
7	Sibsagar	496,288	437,038	933,326	13,687	12,773	26,460
8	Lakhimpur	399,108	325,474	724,582	9,902	9,552	19,454
	Total	2,494,702	2,170,098	4,664,800	62,787	59,028	121,815
	Total for the province ...	4,187,085	3,740,868	7,927,953	122,845	115,474	238,319

IMPERIAL STATEMENT No. II.—*Statement showing the births and deaths*

No.	Districts.	Area, in square miles.	Average population per square mile.	Population (Census of 1931).			Births.		Number of deaths registered.		
				Male.	Female.	Total.	Total number.	Births per 1,000 of population.	Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10	11	12
	SURMA VALLEY.										
1	Cachar	1,972	273	284,738	254,073	538,811	17,714	32.88	5,333	5,064	10,397
2	Sylhet	5,478	497	1,407,645	1,316,697	2,724,342	98,790	36.26	28,828	26,086	54,914
	Total	7,450	438	1,692,383	1,570,770	3,263,153	116,504	35.70	34,161	31,150	65,311
	ASSAM VALLEY.										
3	Goalpara	3,985	222	470,273	412,475	882,748	26,734	30.28	11,373	9,600	20,973
4	Kamrup	3,844	254	513,345	463,401	976,746	21,294	21.80	7,815	7,249	15,064
5	Darrang	2,842	206	317,103	267,714	584,817	15,578	26.64	6,022	5,625	11,647
6	Nowgong	3,896	144	298,585	263,996	562,581	12,295	21.85	4,451	4,180	8,631
7	Sibsagar	5,131	182	496,288	437,038	933,326	26,460	23.35	8,183	7,748	15,931
8	Lakhimpur	4,234	171	399,108	325,474	724,582	19,454	26.85	6,588	6,176	12,764
	Total	23,932	195	2,494,702	2,170,098	4,664,800	121,815	26.11	44,432	40,578	85,010
	Total for the province	31,382	253	4,187,085	3,740,868	7,927,953	238,319	30.06	73,563	71,728	150,321

registered in the districts of Assam during the year 1932.

Ratio of births per 1,000 of population.			Number of males born to every 100 females born.	Excess of births over deaths per 1,000 of population.	Excess of deaths over births per 1,000 of population.	Mean ratio of births per 1,000 during the previous five years.		
Male.	Female.	Total.				Male.	Female.	Total.
9	10	11	12	13	14	15	16	17
16.76	16.12	32.88	104	13.58	...	16.30	15.20	31.50
18.73	17.53	36.26	107	16.10	...	16.07	14.92	30.99
18.40	17.29	35.70	106	15.69	...	16.12	14.96	31.08
15.65	14.63	30.28	107	6.52	...	16.15	15.12	31.27
11.25	10.55	21.80	107	6.38	...	11.29	10.58	21.87
13.68	12.96	26.64	106	6.73	...	12.80	12.18	24.98
11.36	10.49	21.85	108	6.51	...	11.18	10.43	21.61
14.66	13.69	28.35	107	11.28	...	12.71	11.87	24.58
13.67	13.18	26.85	104	9.23	...	11.69	11.28	22.97
13.46	12.65	26.11	107	7.89	...	12.73	11.99	24.72
15.49	14.57	30.06	106	11.10	...	14.13	13.21	27.34

registered in the districts of Assam during the year 1932.

Number of deaths of males to every 100 deaths of females.	Deaths per 1,000 of population from—											Mean ratio of deaths per 1,000 during the previous five years.		
	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and Diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	All causes.			Male.	Female.	Total.
									Male.	Female.	Total.			
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
105	.12	...	...	11.07	1.66	1.41	.20	4.84	18.73	19.93	19.30	20.83	20.44	21.81
111	.53	.004	...	11.61	.83	.49	.28	6.42	20.48	19.81	20.16	22.50	21.70	22.12
110	.46	.003	...	11.52	.97	.64	.26	6.16	20.19	19.83	20.01	22.22	21.90	22.07
118	.19	.33	...	22.20	.24	.12	.21	.48	24.18	23.27	23.76	23.20	21.68	22.49
108	2.21	.21	...	10.31	.60	.29	.17	1.63	15.22	15.64	15.42	13.12	13.30	13.21
107	1.08	.04	...	12.98	1.61	.79	.28	3.13	18.99	21.01	19.91	17.75	19.87	18.72
106	.05	...	...	12.98	.44	.35	.16	1.37	14.91	15.83	15.34	13.8	13.56	13.36
106	.46	.06	...	9.89	1.87	1.03	.22	3.53	16.49	17.73	17.07	15.19	16.27	15.69
107	.06	.05	...	9.43	1.89	1.74	.22	4.22	16.51	18.93	17.62	16.10	17.94	16.93
109	.74	.13	...	12.99	1.09	.70	.21	2.35	17.81	18.70	18.22	16.50	17.03	16.75
110	.63	.08	...	13.39	1.04	.68	.23	3.91	18.77	19.17	18.96	18.81	19.07	18.94

IMPERIAL STATEMENT No. III.—Deaths registered in the

No.	A.—Rural circles.				January.	February.	March.	April.	May.
1	2				3	4	5	6	7
1	Cachar	...	...	...	1,069	865	642	640	897
2	Sylhet	...	...	...	5,742	5,331	4,215	3,717	4,317
3	Goalpara	...	...	...	1,381	1,456	1,207	1,476	1,762
4	Kamrup	...	...	...	797	741	818	1,360	1,521
5	Darrang	...	...	...	805	583	708	801	919
6	Nowgong	...	...	...	380	507	430	432	695
7	Sibsagar	...	...	...	1,240	913	952	1,004	1,192
8	Lakhimpur	...	...	...	816	640	692	790	1,046
Total for rural circles				...	12,230	11,036	9,664	10,221	12,349
Ratio per mille of population				...	1.55	1.55	1.23	1.34	1.57

No.	B.—Towns.				January.	February.	March.	April.	May.
1	2				3	4	5	6	7
SURMA VALLEY.									
1	Silchar ...	...	...	...	10	7	13	6	7
2	Hailakandi	...	...	...	3	1	1	2	2
3	Haflong	...	...	...	...	...	2	1	2
4	Sylhet ...	..	...	...	25	16	11	15	21
5	Karimganj	...	...	...	10	5	5	4	8
6	Maulvibazar	...	...	...	8	7	3	7	3
7	Habiganj	...	...	...	11	16	14	8	10
8	Sunamganj	..	...	...	5	9	3	7	8
Total				...	72	61	52	50	61
ASSAM VALLEY.									
9	Dhubri ...	...	...	...	10	14	8	20	9
10	Goalpara	...	...	...	4	10	2	4	11
11	Gauripur	...	...	...	6	6	6	12	4
12	Gauhati	...	...	...	48	25	34	36	28
13	Barpeta	...	...	...	34	12	20	12	34
14	Palasbari	...	...	...	11	5	5	3	5
15	Tezpur ...	...	...	...	20	19	16	10	19
16	Mangaldai	...	...	...	2	1	2	4	3
17	Nowgong	...	...	...	22	12	14	20	23
18	Jorhat ...	...	...	...	16	8	9	4	7
19	Sibsagar	...	...	...	6	1	6	4	9
20	Golaghat	...	...	...	9	6	6	7	4
21	Nazira ...	...	...	...	2	1	2	1	2
22	Dibrugarh	...	...	...	27	24	23	16	32
23	North Lakhimpur...	...	...	...	1	1	2	2	5
24	Doom Dooma	...	...	...	6	...	2	2	...
25	Tinsukia	...	...	...	...	5	1	1	5
Total				...	224	150	158	158	200
Total for the towns				...	296	211	210	208	261
Ratio per mille for towns				...	1.49	1.18	1.06	1.08	1.32
Total for the province				...	12,526	11,247	9,874	10,429	12,610
Ratio per mille for the province				...	1.55	1.54	1.22	1.33	1.56

districts (rural circles) and towns of Assam during each month of the year 1932.

June.	July.	August.	September.	October.	November.	December.	Total deaths during the year.
8	9	10	11	12	13	14	15
980	879	786	737	784	859	1,091	10,229
4,001	3,765	3,609	3,944	4,390	5,289	5,980	54,300
1,739	2,198	2,002	1,903	1,820	1,883	1,853	20,667
1,426	1,903	1,277	1,188	1,025	1,086	988	14,130
1,040	1,213	824	1,168	952	1,211	1,134	11,359
1,209	912	1,487	561	788	567	453	8,421
1,450	1,563	1,736	1,540	1,398	1,319	1,267	15,574
1,220	1,216	1,173	1,191	1,336	1,180	1,001	12,301
13,065	13,649	12,894	12,232	12,493	13,399	13,749	146,981
1.71	1.73	1.64	1.60	1.59	1.76	1.74	19.00

June.	July.	August.	September.	October.	November.	December.	Total deaths during the year.
8	9	10	11	12	13	14	15
15	16	8	8	13	11	16	130
...	1	3	1	2	1	4	21
2	3	2	1	2	1	1	17
20	22	13	27	23	28	25	246
12	4	13	8	8	7	5	89
4	3	2	3	6	9	5	60
13	12	10	8	12	10	9	133
6	3	6	4	5	16	14	86
72	64	57	60	71	83	79	782
6	10	16	17	16	15	9	150
3	5	8	8	9	11	...	75
10	9	7	7	3	3	8	81
32	60	55	50	41	50	36	495
45	52	45	34	29	20	26	363
4	7	3	5	9	6	13	76
20	24	34	29	23	22	11	247
1	5	6	5	6	1	5	41
20	19	23	11	21	9	16	210
5	10	11	17	18	12	14	131
11	8	23	6	4	10	8	96
13	4	11	4	9	8	6	87
3	5	6	8	3	5	5	43
34	26	22	35	34	35	27	335
5	9	8	7	6	4	13	63
3	...	...	...	2	3	2	20
4	3	5	3	6	3	9	45
219	256	283	246	239	217	208	2,558
291	320	340	306	310	300	287	3,340
1.52	1.61	1.72	1.59	1.56	1.56	1.45	17.17
13,356	13,969	13,234	12,538	12,803	13,699	14,036	150,321
1.71	1.73	1.64	1.60	1.58	1.75	1.74	18.96

with reference to number of days in each month.

IMPERIAL STATEMENT No. IV.—Deaths registered according to

No.	A.—Rural cir- cles.	Under 1 year.															Total.			1 and under 5 years.	
		Not exceeding 1 month.						Total.	Over 1 month and not exceeding 6 months.			Over 6 months and not exceeding 12 months.									
		Male.			Female.				Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.				
		Under one week.	Over one week.	Total.	Under one week.	Over one week.	Total.														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Cachar ...	286	386	672	194	327	521	1,193	304	278	532	266	224	490	1,242	1,023	2,265	662	670		
2	Sylhet ...	2,761	2,796	5,551	2,057	2,377	4,434	9,485	2,329	1,883	4,212	1,004	792	1,796	8,884	7,109	15,993	3,169	3,075		
3	Goalpara ...	941	505	1,446	568	425	993	2,439	1,053	912	1,965	374	344	718	2,873	2,249	5,122	1,953	1,907		
4	Kamrup ...	89	724	813	62	613	675	1,488	492	478	970	240	261	501	1,545	1,414	2,959	1,455	1,413		
5	Darrang ...	183	287	470	134	252	386	856	532	493	1,025	320	326	646	1,322	1,205	2,527	811	804		
6	Nowgong ...	259	297	466	179	176	355	821	388	359	747	226	206	432	1,000	920	2,000	729	802		
7	Sibsagar ...	332	553	885	264	475	739	1,624	571	488	1,059	342	313	655	1,798	1,540	3,338	1,418	1,435		
8	Lakhimpur ...	218	317	535	158	277	435	970	414	380	794	298	316	614	1,247	1,131	2,378	1,024	1,033		
	Total for rural circles.	5,069	5,769	10,838	3,616	4,922	8,538	19,376	6,083	5,271	11,354	3,070	2,732	5,852	19,991	16,591	36,582	11,221	11,139		
	Ratio per mille	...	...	...	...	...	...	...	...	...	...	...	...	...	166.70	147.14	157.22	...	...
	B.—TOWNS.																				
	Surma Valley.																				
1	Silchar ...	2	2	4	3	1	4	8	7	3	10	1	2	3	12	9	21	7	7		
2	Hailakandi ...	1	...	1	...	1	1	2	...	...	...	...	...	...	1	1	2	1	1
3	Haflong ...	...	...	...	...	1	1	1	...	...	..	...	1	1	...	2	2	...	1
4	Sylhet ...	16	5	21	11	4	15	36	22	7	29	7	8	15	50	30	80	9	8		
5	Karimganj ...	3	3	6	1	4	5	11	5	5	10	3	2	5	14	12	26	5	5		
6	Maalvibazar...	2	...	2	...	1	1	3	...	1	1	3	4	7	5	6	11	2	5		
7	Habiganj ...	2	7	9	6	4	10	19	6	6	12	1	1	2	16	17	33	9	9		
8	Sunamganj ...	11	5	16	6	4	10	26	2	2	4	5	4	9	23	16	39	6	1		
	Assam Valley.																				
1	Dhubri ...	8	5	13	4	2	6	19	7	3	10	4	4	8	24	13	37	5	7		
2	Goalpara ...	5	2	7	...	2	2	9	3	...	3	...	...	...	10	2	12	...	3
3	Gauripur ...	3	3	6	1	3	4	10	5	6	11	3	1	4	14	11	25	3	5		
4	Gauhati ...	3	25	28	6	18	24	52	9	11	20	9	7	16	46	42	88	13	10		
5	Barpeta ...	...	29	29	...	28	28	57	14	17	31	5	4	9	48	49	97	34	24	
6	Palasbari ...	...	5	5	...	8	8	13	4	2	6	...	3	3	9	13	22	8	7	
7	Tezpur ...	7	4	11	8	3	11	22	3	3	6	3	3	6	17	17	34	6	6		
8	Mangaldai ...	2	1	3	1	...	1	4	...	...	...	...	...	...	3	1	4	1	...
9	Nowgong ...	7	4	11	3	5	8	19	14	11	25	6	3	9	31	22	53	7	7		
10	Jorhat ...	7	2	9	5	1	6	15	3	6	9	5	3	8	17	15	32	4	4		
11	Sibsagar ...	1	11	12	1	2	3	15	1	1	2	...	1	1	12	5	18	7	6		
12	Golaghat ...	...	6	6	...	9	9	15	5	2	7	2	...	2	13	11	24	6	8	
13	Nazira ...	1	4	5	3	3	6	11	3	...	3	1	2	3	9	8	17	2	2		
14	Dibrugarh ...	8	5	13	4	3	7	20	8	4	12	2	2	4	23	13	36	12	10		
15	North Lakhim- pur.	1	2	3	2	2	4	7	2	1	3	1	...	1	6	5	11	8	3		
16	Doom Dooma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	Tinsukia ...	1	1	2	...	2	2	4	...	2	2	1	3	4	3	7	10	1	...		
	Total for towns	91	131	222	65	111	176	398	123	93	216	62	58	120	407	327	734	156	139		
	Ratio per mille	...	...	...	...	...	...	...	...	...	...	...	...	...	139.19	120.35	130.12	...	...
	Total for the province.	5,160	5,900	11,060	3,681	5,033	8,714	19,774	6,206	5,364	11,570	3,132	2,840	5,972	20,398	16,918	37,316	11,377	11,278		
	Ratio per millo of population.	...	...	...	...	...	...	...	...	...	...	...	...	...	166.05	146.51	156.53	52.67	71.52

* To be calculated on births.

age in the districts (rural circles) and towns of Assam during the year 1932.

5 and under 10 years.		10 and under 15 years.		15 and under 20 years.		20 and under 30 years.		30 and under 40 years.		40 and under 50 years.		50 and under 60 years.		60 and up- wards.		Total (all ages)	
Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
381	370	164	170	216	232	395	748	451	526	481	297	445	296	798	602	5,235	4,994
1,547	1,285	792	640	943	1,577	2,246	3,757	2,460	2,245	2,420	1,692	2,260	1,577	3,760	2,853	28,481	25,819
1,019	883	484	377	403	630	832	1,096	1,061	716	877	534	746	498	935	594	11,183	9,484
846	721	372	265	258	347	551	840	513	527	600	418	510	408	642	485	7,292	6,838
512	467	270	259	230	335	475	733	594	607	580	380	520	380	516	359	5,830	5,529
424	401	228	161	170	234	264	413	323	330	369	269	345	264	395	300	4,327	4,094
705	596	317	303	299	413	498	1,021	676	766	723	440	781	509	773	553	7,984	7,590
528	466	230	231	203	361	507	876	695	617	682	424	610	414	577	445	6,303	5,998
5,962	5,189	2,857	2,415	2,713	4,189	5,768	9,484	6,773	6,334	6,737	4,463	6,217	4,346	8,396	6,196	76,635	70,346
...
2	1	...	...	3	4	8	13	20	7	6	4	7	6	12	2	77	53
...	1	1	...	1	...	3	2	3	1	1	1	...	...	2	1	13	8
...	...	...	1	...	...	1	3	3	...	1	1	...	...	3	1	8	9
5	1	2	5	2	5	8	21	7	11	16	5	14	4	29	14	142	104
...	2	1	1	3	3	2	9	4	3	8	2	6	3	3	3	46	43
1	2	1	...	1	4	2	4	3	2	1	2	3	...	11	5	30	30
2	1	3	1	6	3	8	7	6	7	9	3	8	3	12	3	79	54
2	6	...	1	1	4	4	3	2	...	2	1	9	4	1	...	50	36
4	3	3	2	1	6	19	10	17	5	8	3	6	...	11	3	98	52
6	...	2	4	5	...	10	6	6	3	3	1	4	4	6	...	52	23
3	2	2	2	1	5	...	6	2	3	5	...	4	2	6	5	40	41
7	15	7	8	15	17	79	28	47	24	32	11	21	16	29	23	296	199
13	14	12	8	6	5	9	15	15	14	20	11	11	12	25	18	193	170
2	1	...	2	1	1	3	5	3	2	4	1	2	1	2	9	34	42
3	6	3	2	6	7	39	12	41	9	21	7	16	6	12	11	164	83
1	...	...	1	1	2	5	2	5	1	3	1	6	3	3	2	28	13
6	...	4	4	3	7	21	15	21	10	6	5	13	2	12	14	124	86
4	4	1	1	1	3	10	12	11	6	8	4	11	...	9	6	76	55
6	10	1	2	3	2	2	2	4	2	1	7	8	3	11	1	56	40
4	3	1	2	2	...	4	6	4	3	3	5	2	2	3	5	42	45
1	...	3	...	2	1	2	2	3	2	...	2	3	...	...	1	25	18
7	14	10	3	15	14	42	27	34	17	33	8	16	5	17	15	209	126
2	1	2	...	2	3	9	3	6	2	4	3	1	...	2	1	42	21
...	...	...	...	...	1	3	3	4	3	3	...	2	...	1	...	13	7
1	2	1	...	...	4	6	5	3	...	1	2	4	3	1	1	21	24
82	80	60	50	81	101	299	221	274	137	199	90	177	79	223	149	1,958	1,382
...
6,044	5,278	2,917	2,465	2,794	4,290	6,067	9,705	7,047	6,471	6,936	4,553	6,394	4,425	8,619	6,345	78,593	71,728
15.24	18.96	4.66	5.22	3.76	5.96	17.56	25.47	14.64	15.14	12.25	8.92	11.61	7.96	65.27	47.85	18.77	19.17

IMPERIAL STATEMENT No. V.—Deaths registered according

No.	Districts.	Population according								
		Christians.			Hindus.			Muhammadans.		
		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10	11
	SURMA VALLEY.									
1	Cachar ...	1,462	1,234	2,696	176,990	157,686	334,676	103,474	92,417	195,891
2	Sylhet... ..	1,650	1,335	2,985	575,661	537,765	1,113,426	828,123	775,682	1,603,805
	Total ...	3,112	2,569	5,681	752,651	695,451	1,448,102	931,597	868,099	1,799,696
	ASSAM VALLEY.									
3	Goalpara ...	9,796	8,740	18,536	208,376	177,530	385,906	205,386	182,323	387,709
4	Kamrup ...	3,034	2,549	5,583	370,688	339,307	709,995	128,785	111,637	240,442
5	Darrang ...	8,453	7,263	15,716	246,546	209,110	455,656	37,529	29,974	67,503
6	Nowgong ...	2,615	2,428	5,043	172,664	153,052	325,716	95,597	82,165	177,762
7	Sibsagar ...	7,152	6,079	13,231	445,670	395,378	841,048	24,916	18,991	43,907
8	Lakhimpur ...	8,356	6,508	14,864	360,774	300,946	661,720	17,541	8,408	25,949
	Total ...	39,406	33,567	72,973	1,804,718	1,575,323	3,380,041	509,754	433,498	943,252
	Total for the province ...	42,518	36,136	78,654	1,981,708	1,733,009	3,714,717	613,228	525,915	1,139,143

IMPERIAL STATEMENT No. V.—Deaths registered according

No.	Districts.	Number of deaths registered—concl'd.								
		Buddhists.			Other classes.			Total.		
		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
		30	31	32	33	34	35	36	37	38
	SURMA VALLEY.									
1	Cachar ...	...	...	...	154	129	283	5,333	5,064	10,397
2	Sylhet... ..	1	...	1	169	148	317	28,828	26,086	54,914
	Total ...	1	...	1	323	277	600	34,161	31,150	65,311
	ASSAM VALLEY.									
3	Goalpara ...	8	9	17	2,145	1,684	3,829	11,373	9,600	20,973
4	Kamrup ...	6	...	6	683	575	1,258	7,815	7,249	15,064
5	Darrang ...	7	10	17	1,130	1,105	2,235	6,022	5,625	11,647
6	Nowgong ...	...	...	...	704	741	1,445	4,451	4,180	8,631
7	Sibsagar ...	33	43	76	1,404	1,256	2,660	8,183	7,748	15,931
8	Lakhimpur ...	73	47	120	736	675	1,411	6,588	6,176	12,764
	Total ...	127	109	236	6,802	6,036	12,838	44,432	40,573	85,010
	Total for the Province	128	109	237	7,125	6,313	13,438	78,593	71,728	150,321

to class in the districts of Assam during the year 1932.

to the Census of 1931.									Number of deaths registered.								
Buddhists.			Other classes.			Total.			Christians.			Hindus.			Muhammadans.		
Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
42	19	61	2,770	2,717	5,487	284,738	254,073	538,811	5	4	9	3,115	2,980	6,095	2,059	1,951	4,010
28	12	40	2,183	1,903	4,086	1,407,645	1,316,697	2,724,342	10	16	26	11,460	10,530	21,990	17,188	15,392	32,580
70	31	101	4,953	4,620	9,573	1,692,383	1,570,770	3,263,153	15	20	35	14,575	13,510	28,085	19,247	17,343	36,590
306	276	582	46,409	43,606	90,015	470,273	412,475	882,748	113	135	248	4,101	3,485	7,586	5,006	4,287	9,293
569	221	790	10,269	9,687	19,956	513,345	463,401	976,746	18	29	47	5,791	5,451	11,242	1,317	1,194	2,511
805	381	1,186	23,770	20,986	44,756	317,103	267,714	584,817	182	188	370	4,170	3,854	8,024	533	468	1,001
29	4	33	27,680	26,347	54,027	298,585	263,996	562,581	19	16	35	2,540	2,357	4,897	1,188	1,066	2,254
1,454	1,159	2,613	17,096	15,431	32,527	496,288	437,038	933,326	96	82	178	6,351	6,125	12,476	299	242	541
3,182	2,463	5,645	9,255	7,149	16,404	399,103	325,474	724,582	95	93	188	5,508	5,221	10,729	176	140	316
6,345	4,504	10,849	134,579	123,306	257,885	2,494,702	2,170,098	4,664,800	523	543	1,066	28,461	26,493	54,954	8,519	7,397	15,916
6,387	4,523	10,910	139,332	127,926	267,258	4,187,085	3,740,868	7,927,953	538	563	1,101	43,036	40,003	83,039	27,766	24,740	52,506

to class in the districts of Assam during the year 1932—concl.

Ratio of deaths per 1,000 of population.																	
Christians.			Hindus.			Muhammadans.			Buddhists.			Other classes.			Total.		
Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
3.42	3.24	3.34	17.60	18.90	18.21	19.90	21.11	20.47	...	...	...	55.60	47.48	51.58	18.73	19.93	19.30
6.06	11.98	8.71	19.91	19.58	19.75	20.76	19.84	20.31	35.71	...	25.00	77.42	77.77	77.58	20.48	19.81	20.16
4.87	7.88	6.23	19.38	19.44	19.41	20.66	19.98	20.33	14.49	...	10.20	65.31	59.98	62.74	20.19	19.83	20.01
11.54	15.45	13.38	19.68	19.63	19.63	24.37	23.51	23.97	26.14	32.61	29.21	46.22	38.62	42.54	24.18	23.27	23.76
5.93	11.38	8.42	15.62	16.07	15.83	10.23	16.70	10.44	10.54	...	7.59	66.51	59.36	63.04	15.22	15.64	15.42
21.53	25.88	23.4	16.91	18.43	17.61	14.20	15.61	14.83	8.70	26.25	14.33	47.54	52.65	49.94	18.99	21.01	19.91
7.27	6.59	6.94	14.71	15.40	15.04	12.43	12.97	12.68	...	...	...	25.43	28.12	26.75	14.91	15.83	15.84
13.42	13.49	13.45	14.25	15.49	14.83	12.00	12.74	12.32	22.70	37.10	29.09	82.12	81.39	81.78	16.49	17.73	17.07
11.37	14.29	12.65	15.27	17.35	16.21	10.03	16.65	12.18	22.94	19.08	21.26	79.51	94.42	86.02	16.51	18.98	17.62
13.27	16.18	14.61	15.77	16.82	16.26	16.71	17.06	16.87	20.02	24.20	21.75	50.62	48.95	49.82	17.81	18.70	18.22
12.66	15.59	14.01	16.83	17.62	17.20	19.26	19.01	19.14	19.95	20.02	21.65	51.14	49.35	50.23	18.77	19.17	18.96

IMPERIAL STATEMENT No. VI.—Deaths registered from different

1	2	3	4			5	6	7	8	9	10	
No.	Districts and towns.	Population according to the Census of 1931.	Births.			Birth-rate.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and Diarrhoea.	Respiratory diseases.
			Male.	Female.	Total.							
DISTRICTS EXCLUDING TOWNS.												
SURMA VALLEY.												
1	Cachar	522,616	8,868	8,546	17,414	33·32	63	...	...	5,925	876	724
2	Sylhet	2,679,999	50,380	47,116	97,496	36·38	1,436	11	...	31,487	2,196	1,295
	Total	3,202,615	59,248	55,662	114,910	35·88	1,499	11	...	37,412	3,072	2,019
ASSAM VALLEY.												
3	Goalpara	861,306	13,492	12,636	26,128	30·33	165	292	...	19,483	174	75
4	Kamrup	937,718	10,202	9,561	19,763	21·08	2,122	204	...	9,754	458	169
5	Darrang	572,853	7,845	7,454	15,299	26·70	628	26	...	7,531	878	410
6	Nowgong	552,168	6,190	5,724	11,914	21·58	27	...	...	7,254	220	146
7	Sibsagar	910,151	13,378	12,471	25,849	28·40	408	58	...	9,081	1,710	936
8	Lakhimpur	696,668	9,566	9,249	18,815	27·01	46	34	...	6,695	1,320	1,194
	Total	4,530,864	60,673	57,095	117,768	25·99	3,396	614	...	59,798	4,760	2,930
	Total of districts excluding towns.	7,733,479	119,921	112,757	232,678	30·09	4,895	625	...	97,210	7,832	4,949
TOWNS.												
SURMA VALLEY.												
1	Silchar	13,069	114	95	209	15·99	1	...	...	27	16	30
2	Hailakandi	2,002	39	31	70	34·96	...	...	...	7	2	...
3	Haflong	1,124	10	11	21	18·69	...	...	...	5	...	5
4	Sylhet	21,435	289	305	594	27·71	2	...	...	43	21	15
5	Karimganj	5,691	84	84	168	29·52	2	...	...	33	3	5
6	Maulvi Bazar	4,314	65	76	141	32·68	3	...	...	16	12	2
7	Habiganj	7,577	112	102	214	28·24	4	...	...	21	13	9
8	Sunamganj	5,326	97	86	177	33·23	...	...	...	24	10	...
	Total	60,538	810	784	1,594	26·33	12	...	...	176	77	66

causes in the districts and towns of the province of Assam during the year 1932.

11						12	13	14											15
Injuries.						All other causes.	Total.	Ratio of deaths per 1,000 of population.											No.
Suicide.		Wounds and accidents.	Rabies.	Snakes and wild animals.	Total.			Cholera.	Small-pox.	Plague.	Fever.	Dysentery and Diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.			
Male.	Female.															For the year.	Mean of previous five years.		
10	7	79	...	6	102	2,539	10,229	·12	...	...	11·34	1·68	1·38	·19	4·86	19·57	22·14	1
26	26	649	3	45	749	17,126	54,300	·53	·004	...	11·75	·82	·48	·28	6·39	20·26	22·2	2	
36	33	728	3	51	851	19,665	64,529	·46	·003	...	11·68	·95	·63	·26	6·14	20·15	22·20		
24	19	95	2	34	174	304	20,667	·19	·34	...	22·62	·20	·09	·20	·35	23·99	22·59	3	
24	30	53	7	25	139	1,284	14,130	2·27	·22	...	10·40	·49	·18	·15	1·37	15·07	13·05	4	
11	13	80	10	40	154	1,732	11,359	1·10	·05	...	13·15	1·53	·71	·27	3·02	19·83	18·64	5	
11	12	38	9	13	83	691	8,421	·05	...	...	13·14	·40	·26	·15	1·25	15·25	13·27	6
26	19	130	12	10	197	3,184	15,574	·45	·06	...	9·98	1·88	1·03	·22	3·50	17·11	15·71	7	
22	6	84	8	17	137	2,875	12,301	·07	·05	...	9·61	1·89	1·71	·20	4·13	17·06	16·91	8	
118	99	480	48	139	884	10,070	82,452	·75	·14	...	13·20	1·05	·65	·19	2·22	18·20	16·72		
154	132	1,208	51	190	1,735	29,735	146,981	·63	·08	...	12·57	1·01	·64	·22	3·84	19·01	18·99		
...	...	5	...	...	5	51	130	·08	...	...	2·07	1·22	2·30	·38	3·90	9·95	11·25	1
...	...	...	...	...	...	12	21	...	...	...	3·50	1·00	...	...	5·99	10·49	16·98	2
...	...	...	...	...	...	7	17	...	...	...	4·45	...	4·45	...	6·23	15·12	...	3
...	...	1	...	...	1	164	246	·09	...	...	2·01	·98	·70	·05	7·65	11·48	15·35	4
...	...	3	...	...	3	43	89	·35	...	...	5·80	·52	·88	·52	7·55	15·64	15·64	5
...	...	...	...	...	...	27	60	·70	...	...	3·71	2·78	·46	...	6·26	13·91	11·82	6
...	...	15	...	...	15	71	133	·53	...	...	2·77	1·71	1·19	1·98	9·37	17·55	18·87	7
...	...	5	...	...	5	47	86	...	...	...	4·51	1·89	...	·94	8·82	16·15	20·09	8
...	...	29	...	...	29	422	782	·20	...	...	2·91	1·27	1·09	·48	6·97	12·92	14·85	

on the districts and towns of the province of Assam during the year 1932—concluded.

11		12	13	14														15
Injuries.							Ratio of deaths per 1,000 of population.											
Suicide.		Wounds and accidents.	Rabies.	Snakes and wild animals.	Total.	All other causes.	Total.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.		Number.
Male.	Female.															For the year.	Mean of previous five years.	
2	...	6	...	...	8	76	150	...	11	...	3.29	2.12	1.48	.85	8.06	15.90	17.81	9
1	1	17	75	...	...	...	5.30	1.40	2.18	.16	2.65	11.69	17.93	10
...	26	81	...	...	...	8.58	.89	.36	...	4.65	14.43	20.57	11
4	...	7	2	4	17	198	495	.60	.05	...	5.87	3.26	3.07	.78	9.08	22.71	14.41	12
...	1	9	...	2	12	94	363	1.89	.07	...	11.17	2.97	2.54	.87	6.82	26.35	23.57	13
...	21	76	.29	...	...	8.68	3.47	3.47	...	6.08	22.00	12.16	14
1	...	6	...	1	8	85	247	.09	...	...	4.87	5.65	4.38	.78	8.28	24.06	23.96	15
1	...	2	...	...	3	13	41	1.18	...	...	5.89	4.72	2.95	1.77	7.67	24.17	15.33	16
1	...	7	...	...	8	78	210	...	...	...	4.51	2.69	4.71	.77	7.49	20.17	18.15	17
...	...	4	...	...	4	74	131	...	...	...	3.72	1.56	1.03	.48	8.88	15.72	14.99	18
...	3	96	3.15	...	...	7.65	2.25	.90	...	.45	14.40	13.50	19
...	...	4	...	...	4	34	87	...	.43	...	6.82	.43	2.77	.85	7.25	18.56	15.57	20
...	3	43	...	...	...	10.91	...	.57	...	.86	12.34	17.51	21
3	...	12	1	1	17	141	335	...	.05	...	4.59	2.03	2.78	.91	7.53	17.88	19.11	22
1	...	1	...	1	3	29	63	...	...	...	8.02	1.42	5.19	1.42	13.68	29.72	22.17	23
...	1	20	...	...	...	4.74	2.11	3.16	...	.53	10.53	17.31	24
...	10	45	...	...	...	5.62	.97	.19	...	1.94	8.72	8.14	25
14	1	58	3	9	85	903	2,558	.48	.04	...	6.16	2.48	2.56	.63	6.74	19.00	17.60	
14	1	87	3	9	114	1,325	3,340	.39	.08	...	5.15	2.10	2.10	.59	6.81	17.17	16.74	
168	133	1,295	54	199	1,849	31,060	159,321	.63	.03	...	12.39	1.04	.68	.23	3.91	18.96	18.94	

VI(a) for the year 1932.

7		8		9		10		11		12	Deaths under one year.			Infant mortality rate.
Dysentery.		Diarrhoea.		Pneumonia.		Phthisis.		Other respiratory diseases.		Deaths from child-birth.				
Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.		Male.	Female.	Total.	
8	...	8	...	15	...	...	...	15	...	9	12	9	21	100.48
18	...	3	...	5	...	2	...	8	...	13	50	30	80	134.68
9	...	4	...	7	...	1	...	1	...	7	16	17	33	154.21
2	...	1	...	3	...	...	...	2	...	5	14	12	26	154.76
61	...	10	...	38	...	24	...	5	...	15	46	42	88	147.90
30	...	11	...	17	...	4	...	14	...	4	48	49	97	125.32
14	...	6	...	4	...	2	...	8	...	6	24	13	37	125.00
5	...	4	...	11	...	1	...	2	...	1	10	2	12	78.95
52	...	6	...	13	...	19	...	13	...	4	17	17	34	141.08
28	5	...	3	...	41	...	10	31	22	53	139.11
8	...	5	...	5	...	2	...	2	...	3	17	15	32	139.13
35	...	3	...	17	...	2	...	33	...	8	23	13	36	79.47
17	...	2	...	45	...	13	...	32	...	12	23	22	45	75.50

IMPERIAL STATEMENT No. VII.—Deaths registered from Cholera in the

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from cholera were reported.	Number in each district.	Number from which deaths from cholera were reported.					
1	2	3	4	5	6	7	8	9	10	11
	SURMA VALLEY.									
1	Cachar	13	8	1,607	32	23	19	18	3	4
2	Sylhet	40	39	11,717	469	290	272	184	199	323
	Total	53	47	13,324	501	313	291	192	202	327
	ASSAM VALLEY.									
3	Goalpara	18	10	3,188	54	76	18	18	5	9
4	Kamrup	16	15	2,738	476	98	56	120	502	333
5	Darrang	14	13	1,978	174	41	12	18	19	89
6	Nowgong	12	5	2,323	11	...	1	...	2	4
7	Sibsagar	17	10	2,284	11	1	...	...	7	9
8	Lakhimpur	17	2	2,498	6	6	2	2	2	13
	Total	94	55	15,009	732	222	89	158	537	457
	Total for the Province	147	102	28,333	1,233	535	330	350	739	784

IMPERIAL STATEMENT No. VIII.—Deaths registered from

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.	June.	July.
		Number in each district.	Number from which deaths from small-pox were reported.	Number in each district.	Number from which deaths from small-pox were reported.							
1	2	3	4	5	6	7	8	9	10	11	12	13
	SURMA VALLEY.											
1	Cachar	13	...	1,607	1	...	...	...	...	...	...	...
2	Sylhet	40	3	11,717	56	...	...	5	...	...	1	3
	Total	53	3	13,324	57	...	...	5	...	...	1	3
	ASSAM VALLEY.											
3	Goalpara	18	10	3,188	95	15	25	30	39	82	40	26
4	Kamrup	16	13	2,738	7	11	14	25	18	34	8	13
5	Darrang	14	7	1,978	23	2	...	..	4	7	1	4
6	Nowgong	12	...	2,323	...	...	...	...	...	...	...	...
7	Sibsagar	17	8	2,284	2	...	2	3	6	9	10	10
8	Lakhimpur	17	9	2,498	11	5	10	...	3	...	2	4
	Total	94	47	15,009	138	33	51	58	70	132	61	57
	Total for the Province	147	50	28,333	195	33	51	63	70	132	62	60

districts of Assam during each month of the year 1932.

June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
2	...	2	...	3	...	...	38	26	64	·13	·10	·12	·72	1
110	24	19	8	7	5	6	846	601	1,447	·60	·46	·53	1·65	2
112	24	21	8	10	5	6	884	627	1,511	·52	·40	·46	1·40	
2	26	2	4	1	...	4	83	82	165	·18	·20	·19	1·30	3
303	348	234	145	16	6	1	1,069	1,093	2,162	2·08	2·36	2·21	·84	4
33	81	21	60	55	61	141	325	306	631	1·02	1·14	1·08	·68	5
5	3	3	...	7	2	...	14	13	27	·05	·05	·05	·81	6
7	24	255	62	38	20	6	219	210	429	·44	·48	·46	·54	7
4	5	4	5	2	...	1	18	28	46	·05	·09	·06	·25	8
354	487	519	276	119	89	153	1,728	1,732	3,460	·69	·80	·74	·75	
466	511	540	284	129	94	159	2,612	2,359	4,971	·62	·63	·63	1·06	

Small-pox in the districts of Assam during each month of the year 1932.

August.	September.	October.	November.	December.	Total.			Number of deaths among children.		Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
					Male.	Female.	Total.	Under 1 year.	One to 10 years.	Male.	Female.	Total.		
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
...	...	...	...	...	...	...	...	...	...	...	...	...	·42	1
1	...	...	...	1	3	8	11	...	...	·002	·006	·004	·64	2
1	...	...	...	1	3	8	11	...	...	·001	·006	·003	·61	
12	4	1	14	5	156	137	293	4	2	·33	·33	·33	·73	3
36	7	24	12	4	114	92	206	50	87	·22	·20	·21	·32	4
1	2	...	3	2	15	11	26	...	...	·05	·04	·04	·09	5
...	...	...	...	...	...	...	...	...	...	...	...	...	·01	6
3	8	6	3	...	35	25	60	1	4	·07	·06	·06	·28	7
1	3	1	2	4	21	14	35	1	1	·05	·04	·05	·24	8
53	24	32	34	15	341	279	620	56	94	·14	·13	·13	·31	
54	24	32	34	16	344	287	631	56	94	·08	·08	·08	·43	

IMPERIAL STATEMENT No. IX.—Deaths registered from *fevers*

Number.	Districts.				Circles of Registration.		Villages.		January.	February.	March.	April.	May.
					Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.					
1	2				3	4	5	6	7	8	9	10	11
	SURMA VALLEY.												
1	Cachar	...	...	...	13	13	1,607	545	635	454	363	387	558
2	Sylhet	...	...	...	40	39	11,717	8,614	2,959	2,744	2,281	2,189	2,677
	Total	...	...	...	53	52	13,324	9,159	3,594	3,198	2,644	2,576	3,235
	ASSAM VALLEY.												
3	Goalpara	...	...	...	18	17	3,188	3,146	1,232	1,358	1,110	1,351	1,611
4	Kamrup	...	...	...	16	15	2,738	670	578	575	561	719	1,025
5	Darrang	...	...	...	14	13	1,978	1,490	499	403	483	560	596
6	Nowgong	...	...	...	12	12	2,323	89	316	397	352	362	611
7	Sibsagar	...	...	...	17	17	2,284	235	758	534	606	563	756
8	Lakhimpur	...	...	...	17	16	2,488	1,351	517	363	391	392	612
	Total	...	...	...	94	90	15,009	6,981	3,900	3,570	3,503	3,947	5,211
	Total for the Province	...	...	...	147	142	28,333	16,140	7,494	6,768	6,147	6,523	8,446

IMPERIAL STATEMENT No. X.—Deaths registered from

Number.	Districts.				Circles of Registration.		Villages.		January.	February.	March.	April.	May.
					Number in each district.	Number from which deaths from dysentery and diarrhoea were reported.	Number in each district.	Number from which deaths from dysentery and diarrhoea were reported.					
1	2				3	4	5	6	7	8	9	10	11
	SURMA VALLEY.												
1	Cachar	...	...	...	13	11	1,607	191	102	89	51	69	86
2	Sylhet	...	...	...	40	39	11,717	1,530	262	240	180	164	181
	Total	...	...	...	53	50	13,324	1,721	364	329	231	233	267
	ASSAM VALLEY.												
3	Goalpara	...	...	...	18	18	3,188	150	13	9	14	29	21
4	Kamrup	...	...	...	16	15	2,738	75	43	22	28	50	82
5	Darrang	...	...	...	14	13	1,978	291	51	43	54	65	96
6	Nowgong	...	...	...	12	11	2,323	28	9	21	7	26	28
7	Sibsagar	...	...	...	17	16	2,284	69	107	76	72	151	162
8	Lakhimpur	...	...	...	17	16	2,498	145	63	45	42	95	118
	Total	...	...	...	94	89	15,009	758	286	216	217	416	507
	Total for the Province	...	...	...	147	139	28,333	2,479	650	545	448	649	774

in the districts of Assam during each month of the year 1932.

June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
666	543	471	412	383	450	642	3,101	2,863	5,964	10·89	11·27	11·07	10·54	1
2,613	2,508	2,309	2,411	2,585	2,963	3,385	16,868	14,756	31,624	11·98	11·21	11·61	11·17	2
3,279	3,051	2,780	2,823	2,968	3,413	4,027	19,969	17,619	37,588	11·80	11·22	11·52	11·07	
1,642	2,095	1,958	1,853	1,794	1,818	1,774	10,624	8,972	19,596	22·59	21·75	22·20	18·99	3
1,037	1,360	858	853	794	855	846	5,238	4,828	10,066	10·20	10·42	10·31	9·24	4
706	840	537	745	636	827	759	3,947	3,644	7,591	12·44	13·61	12·98	12·09	5
1,083	834	1,351	479	642	473	401	3,745	3,556	7,301	12·54	13·47	12·98	9·81	6
951	978	947	919	826	693	702	4,798	4,435	9,233	9·67	10·15	9·89	8·66	7
636	722	631	645	746	637	604	3,587	3,249	6,836	8·99	9·98	9·43	8·86	8
6,055	6,829	6,282	5,499	5,438	5,303	5,086	31,939	23,684	60,623	12·80	13·22	12·99	11·34	
9,334	9,880	9,062	8,322	8,406	8,716	9,113	51,908	46,303	98,211	12·40	12·33	12·39	11·23	

Dysentery and Diarrhœa in the districts of Assam during each month of the year 1932.

June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
54	72	71	73	79	72	76	459	435	894	1·61	1·71	1·66	2·29	1
183	143	141	123	175	236	227	1,131	1,124	2,255	·80	·85	·83	1·22	2
237	215	212	196	254	308	303	1,590	1,559	3,149	·94	·99	·97	1·40	
23	27	9	16	11	23	13	115	93	208	·24	·23	·24	·28	3
36	85	78	39	48	45	26	317	265	582	·62	·57	·60	·60	4
127	104	75	126	59	89	55	527	417	944	1·06	1·56	1·61	1·42	5
24	11	43	19	31	17	12	143	105	248	·48	·40	·44	·52	6
201	194	182	135	140	168	152	911	829	1,740	1·84	1·90	1·87	1·87	7
207	132	152	124	158	150	84	733	637	1,370	1·84	1·96	1·89	1·71	8
618	553	539	459	447	492	342	2,746	2,346	5,092	1·10	1·08	1·09	1·06	
855	768	751	655	701	800	645	4,336	3,905	8,241	1·04	1·04	1·04	1·20	

IMPERIAL STATEMENT No. XI.—Deaths registered from

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from respiratory diseases were reported.	Number in each district.	Number from which deaths from respiratory diseases were reported.					
1	2	3	4	5	6	7	8	9	10	11
	SURMA VALLEY.									
1	Cachar	13	12	1,607	218	42	77	71	34	66
2	Sylhet	40	38	11,717	224	196	136	180	89	90
	Total	53	50	13,324	642	238	213	251	123	156
	ASSAM VALLEY.									
3	Goalpara	18	17	3,188	45	7	14	8	13	9
4	Kamrup	16	15	2,738	17	18	26	58	28	24
5	Darrang	14	12	1,978	126	58	41	48	45	26
6	Nowgong	12	10	2,323	25	14	23	16	5	13
7	Sibsagar	17	16	2,284	30	114	72	79	58	61
8	Lakhimpur	17	15	2,498	62	64	104	89	96	109
	Total	94	85	15,009	305	275	280	278	245	242
	Total for the Province ...	147	135	28,333	947	513	493	529	38	398

IMPERIAL STATEMENT No. XII.—Deaths registered from plague

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from plague were reported.	Number in each district.	Number from which deaths from plague were reported.					
1	2	3	4	5	6	7	8	9	10	11
	SURMA VALLEY.									
1	Cachar	13	...	1,607	...	...	...	...	...	...
2	Sylhet	40	...	11,717	...	...	...	...	...	...
	Total	53	...	13,324	...	...	...	...	...	...
	ASSAM VALLEY.									
3	Goalpara	18	...	3,188	...	...	...	...	...	...
4	Kamrup	16	...	2,738	...	...	...	...	...	...
5	Darrang	14	...	1,978	...	...	...	...	...	...
6	Nowgong... ..	12	...	2,323	...	...	...	...	...	...
7	Sibsagar	17	...	2,284	...	...	...	...	...	...
8	Lakhimpur	17	...	2,498	...	...	...	...	...	...
	Total	94	...	15,009	...	...	...	...	...	...
	Total for the Province ...	147	...	28,333	...	...	...	...	...	...

in the districts of Assam during each month of the year 1932.

[illegible]

APPENDIX II.

PROVINCIAL.

Statement showing details of registration in compulsory areas.

Compulsory registration area.	Population according to the Census of 1931.	Estimated birth at 288 per 1,000 married women between the ages of 15 and 40.	Number of births registered during the year.	Estimated birth-rate per mille.	Registered birth-rate per mille.	Number of deaths registered during the year.		Death-rate per mille.		Number of prosecutions under Act IV (B.C.) of 1873.	Number of convictions.
						Including deaths in hospitals.	Excluding deaths in hospitals.	Including deaths in hospitals.	Excluding deaths in hospitals.		
1	2	3	4	5	6	7	8	9	10	11	12
Silchar	13,069	Not available.	209	Not available.	15.99	130	78	9.95	5.96	...	...
Hailakandi	2,002		70		34.96	21	16	10.49	7.99	...	...
Hafong	1,124		21		18.69	17	8	15.12	7.12	...	...
Sylhet	21,435		594		27.71	246	210	11.48	9.80	16	2
Karimganj	5,691		168		29.52	89	75	15.64	13.18	15	13
Maulvi Bazar	4,314		141		32.68	60	52	13.91	12.05	...	...
Habiganj	7,577		214		28.24	133	114	17.55	15.05	17	11
Sunamganj	5,326		177		33.23	86	73	16.15	13.71	...	...
Dhubri	9,435		296		31.37	150	120	15.90	12.71	11	10
Goalpara	6,415		152		23.69	75	60	11.69	9.35	...	...
Gauripur	5,592		158		28.25	81	81	14.48	14.48	...	...
Gauhati	21,797		595		27.30	495	360	22.71	16.52	26	22
Barpeta	13,777		774		56.18	363	348	26.35	25.26	20	3
Palasbari	3,454		162		46.90	76	76	22.00	22.00	3	2
Tezpur	10,268		241		23.47	247	200	24.06	19.48	11	11
Mangaldai	1,696		33		23.40	41	21	24.17	12.38	2	1
Nowgong	10,413		381		36.59	210	153	20.17	14.69	24	20
Sibsagar	6,669		125		18.74	96	69	14.40	10.35	...	...
Nazira	3,484		89		25.54	43	43	12.34	12.34	...	...
Jorhat	8,334		230		27.60	131	107	15.72	12.84	38	35
Golaghat	4,688		167		35.62	87	64	18.56	13.65	12	5
Dibrugarh	12,181		453		24.18	335	180	17.88	14.78	10	10
Doom Dooma	1,900		25		13.16	20	20	10.53	10.53	1	1
North Lakhimpur	2,120		61		28.77	63	55	29.72	25.94	7	7
Tinsukia	5,160		100		19.38	45	45	8.72	8.72	4	4
Total	194,474		5,641		29.01	3,340	2,623	17.17	13.51	217	157

STATEMENTS.
VACCINATION.

Statement No. I.—Showing particulars of Vaccinations in

No.	District.	Population of district according to the census of 1931.	Average population per square mile.	Average number of vaccinators employed throughout the season.	Total number of persons vaccinated.			Average number of persons vaccinated, by each vaccinator.	Primary	
									Total.	Suc.
										Under one year.
1	2	3	4	5	6			7	8	9
SURMA VALLEY AND HILL DIVISION.										
					Male.	Female.	Total.			
1	Cachar	570,531	148	30	21,215	14,188	35,403	1,180	18,759	2,597
2	Sylhet	2,724,342	497	98	85,587	68,824	154,411	1,576	85,925	8,336
3	Khasi and Jaintia Hills	289,926	47	8	11,257	11,381	22,638	2,830	9,798	3,005
4	Naga Hills	178,844	42	6	4,154	3,490	7,644	1,274	6,642	785
5	Lushai Hills	124,404	15	8	5,902	4,253	10,155	1,269	5,676	468
Total of Surma Valley and Hill Division		3,888,047	140	150	128,115	102,136	230,251	1,535	126,800	15,191
ASSAM VALLEY DIVISION.										
6	Goalpara	882,748	222	55	97,308	71,051	168,359	3,061	49,740	4,005
7	Kamrup	976,746	254	50	29,967	23,917	53,884	1,078	37,871	4,592
8	Darrang	584,817	206	35	22,415	15,371	37,786	1,080	23,807	3,001
9	Nowgong	562,581	144	27	17,742	13,317	31,059	1,150	26,315	5,170
10	Sibsagar	933,326	182	46	23,578	17,920	41,498	902	28,606	2,516
11	Lakhimpur	724,582	171	36	17,091	12,892	29,983	833	22,014	3,419
12	Garo Hills	190,911	61	7	10,098	8,818	18,916	2,702	8,025	4,696
Total of Assam Valley Division		4,855,711	179	256	218,199	163,286	381,485	1,490	196,378	27,399
13	Manipur State	445,606	52	17	12,170	9,292	21,462	1,262	15,530	9,126
14	Sadiya Frontier Tract	53,345	17	5	3,360	1,531	4,891	978	2,862	244
15	Balipara Frontier Tract	5,148	9	1	287	230	517	517	388	26
Total Vaccine Department		9,247,857	137	429	362,131	276,475	638,606	1,489	341,958	51,986
Total Dispensaries		...	...	...	...	...	6,815	...	2,139	405
Total tea-gardens by garden agencies		...	...	...	16,715	14,509	31,224	...	24,707	12,556
Total Jails, Mental hospital, Police hospitals and Infectious Diseases hospitals.		...	...	...	5,840	130	5,970	...	474	12
Total Railways		...	...	...	2,613	601	3,214	...	697	72
Grand total		9,247,857	137	429	387,299	291,715	685,329	1,489	369,975	65,031

Sum

1	Total number of persons vaccinated.		Total number of operations performed.	
	Primary.	Re-vaccination.	Primary.	Re-vaccination.
2	3	4	5	
By special staff (Statement I)	341,958	296,648	341,958	296,648
By dispensary staff (Statement III)	2,139	4,676	2,139	4,676
By other agencies—Tea-gardens, Railways, Jail hospitals, Police hospitals, Mental hospital and Infectious Diseases hospitals.	25,878	14,530	25,878	14,530
Total	369,975	315,854	369,975	315,854

DEPARTMENT.

the Province of Assam during the year 1932-33.

vaccination.			Re-vaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous five years.		Average annual number of deaths from small-pox during previous five years.	
Successful.														
Over one and under six years.	Total of all ages.	Unknown.	Total.	Successful.	Unknown.	Primary.	Re-vaccination.		Primary.	Re-vaccination.	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
12,650	17,533	340	16,644	6,885	1,521	95·19	45·53	42·80	1·81	9·14	35,270	61·82	198	·35
57,584	80,812	2,322	68,486	35,001	10,014	96·66	59·86	42·51	2·70	14·62	168,710	61·93	1,292	·47
4,946	9,722	14	12,840	5,421	798	99·37	45·02	52·23	·14	6·21	26,492	91·37	10	·03
4,613	5,398	552	1,002	622	92	88·64	68·35	33·66	8·31	9·18	6,042	33·78	...	...
3,476	4,816	542	4,479	2,399	474	93·81	59·90	58·00	9·55	10·58	7,889	63·41	...	...
83,269	118,281	3,770	103,451	50,328	12,899	96·14	55·58	43·37	2·97	12·47	244,403	62·86	1,500	·39
26,278	40,015	6,333	118,619	69,662	21,784	92·19	71·94	124·24	12·73	18·36	57,280	64·89	470	·53
25,244	34,203	2,370	16,013	6,810	4,250	96·07	58·15	42·02	5·99	26·54	48,959	50·12	198	·20
16,177	21,301	979	13,979	7,153	2,505	93·31	62·34	48·65	4·11	17·92	27,560	47·13	42	·07
16,586	25,044	...	4,744	3,007	...	95·17	63·39	49·86	...	...	27,720	49·27	6	·01
19,394	25,880	1,142	12,892	4,572	1,983	94·23	41·91	32·63	3·99	15·38	40,687	43·59	47	·05
15,521	20,312	544	7,969	3,849	1,264	94·61	57·40	33·34	2·47	15·86	22,402	30·92	115	·16
2,048	6,932	280	10,891	6,721	1,269	89·50	69·85	71·51	3·49	11·65	22,930	120·10	23	·12
121,248	173,687	11,548	185,107	101,804	33,055	93·97	66·95	56·74	5·88	17·86	247,538	50·98	901	·19
5,656	14,782	375	5,932	4,789	335	97·54	85·56	43·92	2·41	5·65	26,911	60·39	118	·26
674	2,065	586	2,029	741	245	90·73	41·54	52·60	20·47	12·07	4,524	84·81	...	...
169	358	8	129	102	3	94·21	80·95	89·35	2·06	2·32	248	48·17	...	...
211,016	509,173	16,287	296,648	157,764	46,537	94·93	63·08	50·49	4·76	15·69	523,426	56·60	2,519	·27
1,985	1,629	190	4,676	1,933	653	83·58	48·05	...	8·88	13·96	7,202	...	...	...
10,036	23,265	205	6,517	4,071	741	94·95	70·48	...	·83	11·37	38,300	...	...	...
5	348	60	5,496	2,010	900	84·06	43·73	...	12·66	16·38	1,998	...	...	...
312	560	50	2,517	552	508	86·55	27·47	...	7·17	20·18	906	...	...	...
222,454	334,975	16,792	315,854	166,330	49,339	94·84	62·41	54·21	4·54	15·62	571,932	61·84	2,519	·27

mary.

Percentage of successful cases in which results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Ratio of successful vaccination per 1,000 of population.	Total cost of Department.	Average cost of each successful case.
Primary.	Re-vaccination.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under one year.	One and under six years.			
6	7	8	9	10	11	12	13	14
94·93	63·08	429	1,489	51,986	211,016	50·49	Rs. a. p. 1,06,877 5 0	Rs. a. p. 0 3 8
83·58	48·05	...	...	405	1,085	...	...	...
94·56	53·57	...	...	12,640	10,353	...	...	...
94·84	62·41	429	1,489	65,031	222,454	54·21	1,06,877 5 0	0 3 8

STATEMENT No II.—*Showing the cost of Vaccination*

No.	District.	Expen												
		European supervising officer.	Pay.	Native supervising officer.	Pay.	Paid vaccinators.	Pay.	Licensed vaccinators.	Pay.	Clerks.	Pay.	Peons, etc.	Pay.	Total pay of establishment.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.	Rs. a. p.
1	Cachar ...	...	...	3	1,457 0 0	30	4,003 1 0	...	...	...	...	...	...	5,460 1 0
2	Sylhet ...	...	...	10	4,380 0 0	98	12,096 12 0	...	...	...	...	...	...	16,476 12 0
3	Khasi and Jaintia Hills	...	...	2	1,190 10 0	8	1,711 12 0	...	...	...	...	...	...	2,902 6 0
4	Naga Hills	...	...	1	456 0 0	6	1,260 0 0	...	...	...	...	...	...	1,716 0 0
5	Lushai Hills	...	...	1	468 0 0	8	1,092 0 0	...	...	...	...	...	...	1,560 0 0
6	Goalpara ...	...	...	4	1,938 7 0	56	8,091 9 0	...	...	...	...	...	...	9,900 0 0
7	Kamrup ...	...	...	4	2,213 3 0	50	5,562 4 0	...	...	...	...	...	...	7,775 7 0
8	Darrang ...	...	...	3	1,448 3 0	35	3,882 1 0	...	...	...	...	...	...	5,330 4 0
9	Nowgong ...	...	...	2	1,242 0 0	27	3,540 0 0	...	...	...	...	...	...	4,782 0 0
10	Sibsagar ...	...	...	4	2,206 7 2	46	5,726 9 0	...	...	...	...	...	...	7,933 0 2
11	Lakhimpur	...	...	3	1,617 5 0	36	4,392 1 0	...	...	...	...	...	...	6,209 6 0
12	Garohills	...	...	1	504 0 0	7	1,020 0 0	...	...	...	...	...	...	1,524 0 0
13	Manipur State	...	...	2	480 0 0	17	1,308 13 0	...	...	...	...	...	...	1,788 13 0
14	Sadya Frontier Tract	...	...	1	643 14 0	5	560 9 0	...	...	...	...	...	...	1,204 7 0
15	Balipara Frontier Tract	...	...	...	...	1	119 12 0	...	...	...	...	...	...	119 12 0
	Total of Districts	...	...	41	20,345 1 2	429	54,337 3 0	...	...	...	...	...	...	74,682 4 2
	Shillong Vaccine Depot	...	...	1	2,592 0 0	...	1,922 2 0	...	...	...	...	...	...	4,514 2 0
	Total for the Province	...	...	42	22,937 1 2	429	56,259 5 0	...	...	...	...	...	...	79,196 6 2

in the Province of Assam during the year 1932-33.

diture.			Paid from—							vaccina- Number of all successful tions and re-vaccinations.	Average cost of each successful case.
Travelling allowance.	Contingencies.		Total cost.	Imperial Fund.	Provincial Fund.	Local Fund.	Municipalities.	Native States.	Total.		
	Cost of Vaccine.	Other contingencies.									
16	17	18	19	20	21	22	23	24	25	26	27
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		Rs. a. p.
917 13 0	...	226 15 0	6,604 13 0	...	3,357 2 0	2,922 5 0	325 6 0	...	6,604 13 0	24,418	0 4 4
2,196 0 0	...	770 8 9	19,443 4 9	..	6,755 13 6	11,696 7 9	990 15 6	...	19,443 4 9	115,813	0 2 8
672 7 0	...	20 0 0	3,594 13 0	...	3,354 13 0	...	240 0 0	...	3,594 13 0	15,143	0 3 9
397 11 0	...	39 15 9	2,153 10 9	...	2,153 10 9	...	...	...	2,153 10 9	6,020	0 5 8
453 4 0	...	30 0 0	2,048 4 0	...	2,048 4 0	...	...	...	2,048 4 0	7,215	0 4 6
631 2 0	...	633 8 6	11,164 10 6	...	2,641 3 6	5,080 1 0	443 6 0	...	11,164 10 6	109,677	0 1 7
1,111 15 0	...	374 9 3	9,261 15 3	...	3,269 13 6	5,992 1 9	...	...	9,261 15 3	41,643	0 3 7
908 15 6	...	354 0 9	6,593 4 3	...	2,248 0 0	4,011 15 3	323 5 0	...	6,593 4 3	28,454	0 3 8
591 0 0	...	80 0 0	5,453 0 0	...	1,692 0 0	3,473 0 0	288 0 0	...	5,453 0 0	28,051	0 3 1
992 4 6	...	507 14 3	9,433 2 11	...	3,215 0 11	5,170 5 0	1,047 13 0	...	9,433 2 11	30,452	0 4 11
331 9 0	...	...	6,540 15 0	...	2,148 14 0	3,752 14 0	639 3 0	...	6,540 15 0	2,161	0 4 4
462 8 0	...	43 5 0	2,029 13 0	...	2,029 13 0	...	...	...	2,029 13 0	13,653	0 2 5
978 9 4	1,478 6 0	8 14 3	4,254 10 7	..	...	...	...	4,254 10 7	4,254 10 7	19,571	0 3 6
246 7 0	...	31 12 0	1,482 10 0	1,482 10 0	...	...	...	...	1,482 10 0	2,806	0 8 5
61 1 0	...	...	180 13 0	180 13 0	...	...	...	...	180 13 0	460	0 6 3
10,957 10 4	1,478 6 0	3,121 7 6	90,239 12 0	1,663 7 0	34,914 8 2	45,099 1 9	4,308 0 6	4,254 10 7	90,239 12 0	466,937	0 3 1
...	...	12,123 7 0	16,637 9 0	...	16,637 9 0	...	...	...	16,637 9 0	...	...
10,957 10 4	1,478 6 0	15,244 14 6	1,06,877 5 0	1,663 7 0	51,552 1 2	45,099 1 9	4,308 0 6	4,254 10 7	1,06,877 5 0	466,937	0 3 8

B.—DISPENSARY

Statement No. III.—Showing Dispensary Vaccination

Districts.	Number of dispensaries in each district to which a vaccinator is attached.	Average number of vaccinators attached to dispensaries during the year.	Total number of persons vaccinated.	Average number of persons vaccinated by each vaccinator.	Primary vaccination.				
					Total.	Successful.			Unknown.
						Under one year.	Over one and under six years.	Total of all ages.	
1	2	3	4	5	6	7	8	9	10
Cachar
Sylhet	632	...	298	12	192	251	22
Khasi and Jaintia Hills	299	...	69	7	31	55	14
Naga Hills	1,236	...	146	33	71	104	22
Lushai „	654	...	312	22	192	214	...
Goalpara	1,127	...	170	38	86	165	2
Kamrup
Darrang
Nowgong
Sibsagar	51	...	51	2	27	41	...
Lakhimpur	407	...	64	8	46	64	...
Garó Hills	1,094	...	363	41	118	170	80
Manipur State	1,184	...	584	197	288	485	50
Sadiya Frontier Tract	108	...	69	44	25	69	...
Balipara Frontier Tract	23	...	13	1	9	11	...
Total	6,815	...	2,139	405	1,085	1,629	190

Comparative Statement No. IV.—Showing the number of persons primarily vaccinated in each of the under

Vaccinating Agents.	Persons							
	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.
	Year ending							
	1923-24.		1924-25.		1925-26.		1926-27.	
1	2	3	4	5	6	7	8	9
Government ...	25,859	23,730	18,858	17,945	29,979	27,812	34,589	27,786
Dispensaries ...	1,363	1,163	1,457	1,250	2,353	1,987	2,212	1,801
Municipal ...	5,997	5,499	4,991	4,726	4,881	4,624	5,009	4,787
Local Funds ...	243,130	231,092	262,227	243,759	263,846	256,726	301,565	286,393
Licensed vaccinators	...	...	...	...	...	...	...	...
Apprentices ...	6,101	5,945	2,952	2,877	733	700	900	885
Native States ...	13,534	10,506	16,325	11,961	18,089	15,370	16,972	14,655
Total ...	295,984	277,935	306,810	287,518	324,881	307,219	361,247	336,407

VACCINATION.

in the Province of Assam during the year 1932-33.

Re-vaccination.			Percentage of successful cases in which the results were known.		Percentage of unknown cases to total cases.	
Total.	Successful.	Unknown.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
11	12	13	14	15	16	17
...
334	112	87	90.94	45.34	7.38	26.05
230	24	125	100.00	22.86	20.29	54.35
1,090	634	117	83.87	65.16	15.07	10.73
342	70	...	68.59	20.47	...	...
957	456	116	98.21	54.22	1.18	12.12
...
...
...
...	...	...	80.39	...	...	...
343	215	...	100.00	62.68	...	...
731	155	183	60.07	28.28	22.04	25.03
600	257	25	90.82	44.70	8.56	4.17
39	3	...	100.00	7.69	...	...
10	7	...	84.62	70.00	...	...
4,676	1,933	653	83.58	48.05	8.88	13.96

and the number of those who were successfully vaccinated in the Province of Assam mentioned official years.

primarily vaccinated.

Total number.	Number success- fully vaccinated.	Total number.	Number success- fully vaccinated.	Total number.	Number success- fully vaccinated.	Total number.	Number success- fully vaccinated.	Total number.	Number success- fully vaccinated.	Total number.	Number success- fully vaccinated.
31st March—											
1927-28.		1928-29.		1929-30.		1930-31.		1931-32.		1932-33.	
10	11	12	13	14	15	16	17	18	19	20	21
65,524	59,339	50,560	44,570	36,803	32,086	38,520	33,353	41,320	37,769	35,322	31,076
5,980	5,171	5,662	4,503	2,851	2,231	2,539	2,217	2,753	2,108	2,139	1,629
5,881	5,443	7,231	6,744	4,935	4,645	4,752	4,521	5,900	5,542	5,846	5,582
312,404	291,569	288,661	270,257	260,658	238,776	250,393	230,321	250,148	221,525	284,814	257,327
...
1,092	1,059	713	657	1,132	962	1,145	1,078	600	555	446	406
18,304	15,995	19,366	14,258	18,240	16,171	17,403	15,203	17,551	15,484	15,530	14,782
409,185	378,579	372,193	340,989	324,619	294,871	314,752	286,693	318,272	282,983	344,097	310,802

Statement No. V.—Showing particulars of Vaccination verified by Inspecting Officers for the year 1932-33.

District.	Total number of persons vaccinated.		Total number inspected.				Percentage of inspection to total number vaccinated.				Percentage of successful cases to total number inspected.				Percentage of successes reported by vaccinators.	
			By Assistant Directors of Public Health or Civil Surgeons.		By Native Superintendents or other Inspecting Officers.		By Assistant Directors of Public Health or Civil Surgeons.		By Native Superintendents or other Inspecting Officers.		By Assistant Directors of Public Health or Civil Surgeons.		By Native Superintendents or other Inspecting Officers.			
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Cachar ...	18,759	16,644	2,009	1,013	7,908	4,888	10·71	6·09	42·16	29·37	93·62	52·41	89·87	34·32	95·19	45·53
Sylhet ...	86,223	68,820	7,399	2,729	45,708	31,548	8·58	3·97	53·01	45·84	96·76	47·78	90·54	47·71	93·66	59·86
Khasi and Jaintia Hills ...	9,867	13,070	140	12	4,072	3,628	1·42	·09	41·27	27·76	100·00	83·33	99·41	85·50	99·37	45·02
Naga Hills ...	6,783	2,092	109	515	1,972	57	1·61	24·62	29·05	2·72	89·90	78·64	85·65	43·87	88·64	68·35
Lushai „ ...	5,988	4,821	48	148	1,747	1,406	·60	3·07	29·17	29·16	83·34	33·10	87·06	57·23	93·51	59·90
Goalpara ...	49,910	119,576	1,364	4,327	15,634	28,963	2·73	3·62	31·72	24·22	88·20	43·79	76·16	46·17	92·19	71·94
Kamrup ...	37,871	16,013	1,971	265	16,827	7,782	5·20	1·65	44·43	46·60	96·24	67·37	86·18	31·73	96·07	58·15
Darrang ...	23,807	13,979	3,232	1,274	8,041	3,593	13·58	9·11	33·78	25·70	87·59	53·01	88·24	54·27	93·31	62·34
Nowgong ...	26,315	4,744	3,079	350	24,539	2,125	11·70	7·38	93·44	44·79	98·39	43·04	95·76	44·68	95·17	63·39
Sibsagar ...	28,657	12,892	1,231	297	8,060	1,808	4·30	2·30	28·13	14·02	88·13	39·72	91·47	22·38	94·23	41·91
Lakhimpur ...	22,078	8,312	1,343	32	16,909	2,190	6·08	·38	76·59	26·35	91·95	62·50	95·54	68·00	94·61	57·40
Garó Hills ...	8,383	11,622	252	389	1,646	1,113	3·00	3·35	19·62	9·58	71·82	27·25	80·13	53·99	89·50	69·85
Manipur State ...	16,114	6,532	635	17	7,377	1,463	3·94	·26	45·77	22·40	96·69	82·35	96·65	65·89	97·54	85·56
Sadiya Frontier Tract ...	2,931	2,068	87	53	921	1,296	2·97	2·56	31·42	62·67	85·06	28·30	83·17	29·01	90·73	41·54
Balipara Frontier Tract ...	401	139	27	12	232	64	6·73	8·63	57·86	46·04	100·00	75·00	92·67	52·24	91·21	80·95
Total ...	344,997	301,324	22,926	11,433	161,843	91,924	6·66	3·79	47·03	30·51	91·18	54·51	89·57	49·13	91·93	63·03

Statement No. VI.—Showing the number of vaccinations performed in Municipal towns on children under one year of age during the year 1932-33.

Districts.	Towns.	Number of births during the year.	Number of deaths amongst children under one year during the year.	Number of successful vaccination on children under one year during the year ending 31st March 1933.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Cachar	Silchar ...	225	13	40	21st January 1892.
	Hailakandi ...	69	6	...	10th November 1922.
Sylhet	Sylhet ...	626	83	431	1st October 1882.
	Habiganj ...	250	36	138	11th December 1913.
	Sunamganj ...	171	45	31	28th June 1915.
	Karimganj ...	170	31	59	27th July 1915.
Khasi & Jaintia Hills	Maulvi Bazar ...	129	14	38	16th April 1916.
	Shillong ...	526	40	280	21st June 1895.
	Total of Surma Valley and Hill Division.	2,166	268	1,017	
Goalpara	Dhubri ...	286	35	140	13th February 1891.
	Goalpara ...	164	12	22	12th November 1890.
	Gauripur ...	152	21	53	15th September 1922.
Kamrup	Gauhati ...	594	87	502	August 1882.
	Barpeta ...	772	93	243	29th October 1915.
Darrang	Tezpur ...	258	31	66	22nd May 1907.
	Mangaldai ...	44	5	32	12th October 1906.
Nowgong	Nowgong ...	368	44	269	7th April 1897.
Sibsagar	Sibsagar ...	133	16	12	21st January 1892.
	Jorhat ...	263	38	32	12th April 1892.
	Golaghat ...	151	19	12	24th March 1892.
	Nazira ...	100	19	9	1st December 1916.
Lakhimpur	Dibrugarh ...	443	36	177	September 1883.
	Doom Dooma ...	19	...	4	21st October 1918.
	Tinsukia ...	93	13	18	31st August 1922.
	Total of Assam Valley Division.	3,840	469	1,591	
	Total for the Province.	6,006	737	2,608	

Statement No. VII.—Showing, side by side, the ratio (per 1,000 of population) of deaths

District.	1923-24.		1924-25.		1925-26.		1926-27.	
	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.
1	2	3	4	5	6	7	8	9
Cachar	·02	19,225	·01	19,613	·05	21,904	·01	24,769
Sylhet	·02	118,735	·02	122,817	·06	139,006	·16	156,196
Khasi and Jaintia Hills ... ..	...	11,772	...	11,145	·004	13,547	·05	19,188
Naga Hills ... ..	...	5,626	...	5,142	·006	4,859	...	8,740
Lushai „ ... ..	...	2,811	...	4,316	...	5,329	...	6,712
Goalpara	·29	26,738	·19	27,680	·30	31,517	·57	42,533
Kamrup	1·33	34,481	·96	41,750	·69	39,986	1·32	48,991
Darrang	·62	17,013	·56	17,558	·22	20,353	·36	21,387
Nowgong	2·72	15,205	·15	18,006	·02	20,389	·01	23,095
Sibsagar	·06	27,826	·26	23,748	2·99	40,821	3·40	61,006
Lakhimpur	·04	15,030	·02	16,576	·14	22,346	·38	24,436
Garo Hills	·02	7,183	...	7,832	·02	8,106	·50	23,994
Manipur State ... ..	...	12,540	...	13,356	...	16,300	...	15,598
Sadiya Frontier Tract ... ..	...	1,454	·02	1,133	·09	1,363	·05	2,197
Balipara Frontier Tract ... ..	...	...	...	...	...	...	...	...
Total	·40	315,639	·22	330,672	·45	385,816	·65	478,842

from small-pox and the number of successful vaccinations during the ten years ending 1932-33.

1927-28.		1928-29.		1929-30.		1930-31.		1931-32.		1932-33.	
Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.
10	11	12	13	14	15	16	17	18	19	20	21
·15	41,331	1·61	65,942	·32	30,687	·04	19,418	...	19,255	...	24,418
1·37	253,654	1·79	219,845	·15	145,407	·04	129,243	·01	108,508	·004	116,176
·28	63,020	·06	29,559	·03	13,574	...	12,967	·003	14,098	...	15,222
·006	8,845	...	5,374	...	5,845	...	5,325	...	6,044	...	6,758
...	9,588	...	10,632	...	11,771	...	5,037	...	4,914	...	7,499
1·68	65,943	1·20	49,433	·26	55,246	·61	51,704	·29	65,171	·30	110,298
·67	49,939	·37	49,392	·21	49,553	·29	49,825	·17	46,086	·17	41,043
·10	25,860	·10	26,664	·08	26,726	·15	35,005	·04	24,716	·05	28,454
·005	26,443	·06	26,871	·01	27,908	...	28,873	...	28,507	...	28,051
·57	50,473	·06	37,525	·02	39,509	·03	41,950	·07	34,567	·06	30,493
·53	26,400	·15	20,639	·26	21,346	·27	25,601	·11	18,877	·03	24,440
·41	41,017	·35	22,531	·06	21,541	·13	18,997	·15	14,948	·03	13,978
...	34,317	...	41,077	...	30,444	...	19,284	...	18,726	...	20,313
...	3,757	...	4,793	...	4,385	·02	6,777	...	4,123	·09	2,878
...	...	...	...	...	...	...	...	...	291	...	478
·79	700,587	·86	610,277	·14	483,942	·14	450,006	·07	408,831	·06	470,499

GOVERNMENT OF ASSAM.

The Governor and the Minister of Local Self-Government.

LOCAL SELF-GOVERNMENT DEPARTMENT.

PUBLIC HEALTH BRANCH.

Resolution on the Annual Public Health Report of the Province of Assam for the year 1932.

Extract from the Proceedings of the Governor of Assam and the Minister of Local Self-Government in the Local Self-Government Department, Public Health Branch, No. 2283 L.S.-G., dated the 1st November 1932.

R E S O L U T I O N.

CLIMATIC conditions were on the whole normal except in the latter part of the year when rainfall was in excess in most parts of the province. In an agricultural province like Assam where the bulk of the people grow their own food the fall in the prices of agricultural produce has affected the condition of the people adversely.

2. The vital statistics—though not as perfect as one would wish them to be—show that Assam had to its credit a birth rate and a death rate which compare very favourably with the corresponding rates of most other provinces in India. The birth and death rates for the year 1932 in towns (where registration is compulsory) in rural areas (where registration is not compulsory and is mostly done by Chaukidars and Gaonburas) and in tea garden areas (where registration is done by the tea garden staff) were 29·01 and 17·17, 30·09 and 19·01 and 30·82 and 13·21 respectively per mille of the population. These are better than the figures of the preceding year and indicate that health conditions have been better during the year under report.

3. There were no serious outbreaks of small-pox or cholera. Small-pox was particularly prevalent in the Lower Assam Valley where the unprotected persons constitute a danger to public health. Government regret to notice that there is still opposition to vaccination and recourse has to be had to the penal provisions in the Regulations framed under the Epidemic Diseases Act. They cannot help thinking however that most of the opposition is due to ignorance and to the inconvenience caused to agriculturists. The best hope of progress seems to lie in the direction of enlisting the co-operation of the influential elements in the villages. In regard to cholera the principal public health measure continued to be inoculation except in Nowgong district and Habiganj subdivision. In the two latter areas experiment with bacteriophage was continued under the direction of the Assam Medical Research Society acting in co-operation with Local Bodies and the Public Health Department staff. As the general incidence of the disease was low throughout the province, it would be unsafe to conclude without longer experience that the relatively low mortality in these particular areas was due to bacteriophage. It is clear however that the experiment merits continuance. Should it ultimately prove successful, it will prove to be a discovery of far-reaching importance in dealing with cholera and certain types of dysentery.

4. *Kala azar* continued to be well under control. The number of deaths from *kala azar* and the number of cases treated fell to 987 and 11,958 respectively. Experiments with the new drug Neo-stibosan were continued side by side with Urea-Stibamine. The consensus of the medical opinions received after submission of the report under review appears to be in favour of Urea-Stibamine in regard

to treatment of persons in rural areas where there is no indoor accommodation for patients at the treatment centres and where it is inconvenient for the patients to visit the centres daily from their homes. It is a matter of satisfaction that the Public Health Department are now able to divert their attention without relaxing their grip on *kala azar* to other ailments such as minor eye complaints, yaws, leprosy and malaria. Leprosy in particular is gradually attracting the attention it deserves. Leprosy clinics have been established in all districts and all Public Health Dispensaries have been provided with necessary equipment and are treating the disease. The Assam Branch is of the British Empire Leprosy Relief Association and the Indian Red Cross and some of the Local Bodies have been instrumental in helping and extending this good work.

5. The deaths from "fevers" which term includes malaria and *kala azar* numbered 98,211 in 1932 as against 93,189 in 1931. As *kala azar* is from all accounts decreasing, the increase in the mortality may reasonably be attributed to other fevers among which by far the most important is malaria. Though the figures do not differentiate between cases of malaria and those of other fevers, malaria is believed to be on the increase and is now the most serious cause of mortality and debility in Assam. Anti-malarial measures have been taken up as an experiment in various places where the incidence of malaria was relatively high—the Assam Medical Research Society playing an active part in the experiment. The experience gained however shows that the society has not the staff necessary to supervise the experiments scattered all over the province and Government are considering whether it would not be better if the Civil Surgeon of each district is placed in charge of all the anti-malarial operations in his district and the staff employed in those operations placed under his control. Mechanical and chemical means such as the improvement of drainage and the use of larvicides have been of some value in particular areas in the hills and submontane tracts, but by far the most hopeful line of action applicable to the province as a whole continues to be in the treatment of human reservoirs with drugs having a quinine content. The problem of placing quinine or a cheaper substitute within the means of the people has in these circumstances assumed special importance and Government are considering how best to tackle it in their present depleted finances.

6. Owing to financial stringency municipalities and small towns decreased their expenditure on public health from Rs. 5,97,683 in 1931 to Rs. 5,45,568 in 1932 and the Local Boards from Rs. 2,12,738 to Rs. 1,74,011. Government owing to their own depleted finances were unable to make any grants to the local bodies during the year for improvement of the rural water-supply. The Public Health Department have helped in the formulation of model rules for the guidance of Municipal Boards and Town Committees and officers of the Department have in their inspection notes offered criticism and advice from time to time. Government believe that the rate of progress can be much accelerated if the Department could go further and show to the Local Bodies that compliance with their recommendations does not involve expenditure beyond their means and put forward type plans of sanitary conveniences which will be suited to the ways of living and the economic condition of the bulk of the residents. The year saw the enactment of the Assam Pure Food Act which together with the rules to be framed thereunder should furnish a convenient weapon for checking adulteration of articles of food or drink in urban as well as rural areas.

7. His Excellency the Governor and his Minister have noted with satisfaction the good work done by the officers and staff of the Public Health Department and the Assam Medical Research Society. Their thanks are due to Lieutenant-Colonel Murison for his efficient administration of the Department and to Dr. Gupta for his interesting report.

ORDER.—Ordered that the Resolution be published in the *Assam Gazette* for general information.

By order of the Government of Assam,

DATED SHILLONG :
The 6th October 1933. }

H. G. DENNEHY,
Secretary to the Government of Assam,
Transferred Departments.

